

Appendix D

Draft QUALITY MANAGEMENT PLAN

Reference Section 2.26

Approved: _____
Signature Date

Quality Management Plan

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1.0 Management

1.1 Project Quality Charter

(Add once the Partnering Charter between the Design-Builder and the Department's Design-Build Project Personnel has been agreed upon.)

1.2 Project Quality Organization

The Quality Management Plan includes the Design Quality Organization (DQO) and the Construction Quality Organization (CQO). The DQO, under the direction of the Design Quality Assurance Manager (DQAM), and the CQO, under the direction of the Construction Quality Assurance Manager (CQAM), will report directly to the Project Manager (PM), thus limiting the influence of schedule, performance, or cost on the Quality Organization (QO). The QO will provide the quality assurance review, testing and inspections necessary to ensure the project quality meets contract requirements.

This Quality Management Plan also includes the Quality Control (QC) reporting to the Design Manager and the Construction Manager. The Design QC checking and Construction QC inspections and testing are a part of the production organizations and will provide the first level of review and controls on the design and construction efforts.

1.2.1 QO Key Positions

The Quality Organization (QO) includes the following six key quality management positions:

- Project Manager (PM) – responsible for the overall management and implementation of the project including the Quality Management Plan (QMP).
- Construction Quality Assurance Manager (CQAM) – responsible for the quality of the construction; is on-site during all construction activities.
- Design Quality Assurance Manager (DQAM) – responsible for the quality of the project design.
- Environmental Compliance Manager (ECM) – responsible for the quality of the environmental protection and compliance elements.
- Construction Manager (CM) – responsible for quality control inspection and testing of the construction work.
- Design Manager (DM) – responsible for the quality control checking of the design work.
- Quality Testing Supervisor – responsible for the sampling and testing operations for quality assurance.

1.2.2 Quality Organization's Authority to Stop Work

As is shown in the following Quality Organization Chart, the above individuals have sufficient authority to identify quality problems and to recommend, provide, and verify implementation of solutions. If there is evidence that the QMP is not being followed, the QO has the authority to stop work until the appropriate quality procedures are implemented.

In order for the QO to stop work, the CQAM will notify the Design-Builder and the WSDOT verbally followed by written notice within 24 hours. If the appropriate WSDOT or Design-Builder representative is not readily available, a phone message will suffice. The notification identifies the reason for stopping the Work. Upon receipt of verbal notification, the Design-Builder is responsible for completely halting the work on the activity. The CQAM and Project Manager develop a written plan of action to resolve the issues and implement any changes. When the issues(s) have been resolved to the satisfaction of the CQAM, the CQAM provides written notification to both the Design-Builder and the WSDOT that the stop work directive is removed and work may begin immediately. The WSDOT retains the authority to override the CQAM's decision if it feels that the proposed solution is not acceptable

Figure 1: Quality Organization
(To be developed by the Design-Builder)

1.3 Roles, Responsibilities and Staff Qualifications

The matrix below outlines the roles and responsibilities of the various project participants.

FIGURE 2: ROLES, RESPONSIBILITY, AND QUALIFICATIONS MATRIX

Name	Duties/Responsibilities	Qualifications
Project Manager (PM)	<ul style="list-style-type: none"> – Manage the quality program for the Project. – Designate appropriate trained personnel of QO to perform audits. – Review Design Quality Process periodically for conformance. – Organize and maintain a document control system for all quality data. – Review and certify progress payments for the Design-Builder. – Review and certify any Design-Builder payments made to utility owners. – Coordinate reviews with outside entities. – Coordinate QCP reviews. – Review and sign-off on notices of nonconformance. – Assist in developing a plan for process change to eliminate nonconformance trends. – Initiate FDC's at Department's request. – Review FDC requests for compliance with QMP. – Review change requests to released packages (NDC's) for conformance with QMP. – Develop and maintain shop drawing submittal log. 	<ul style="list-style-type: none"> – Key person on project. – Experience in managing major urban freeway projects.
Construction Quality Assurance Manager (CQAM)	<ul style="list-style-type: none"> – On-site during all construction activities. – Manage inspection of all work during construction. – Coordinate and schedule resources to provide appropriate QA inspection and testing for all construction efforts on a daily and weekly basis. – Provide training for the Design-Builder in an effort to ensure appropriate quality procedures are in place, through pre-activity meetings and daily on-site reviews. – Ensure all QO inspector staff has appropriate training and certification for the types of construction activities they will be overseeing. – Verify that all sampling and testing personnel have the appropriate and certification for the types of materials they will be testing. – Maintain a NCR log – Maintain a daily occurrence log. – Maintain utility relocations inspection information. – Develop and maintain a list of lab equipment available, latest calibration data, and date of inspection. – Schedule Quality Checkpoints – Initiate FDC's due to constructability issues or differing field conditions. 	<ul style="list-style-type: none"> – Professional Engineer in Washington. – Key person on project. – Experience in construction inspection administration. – Experience in construction materials acceptance administration. – Experience in reading specifications, plans, and drawings. – Experience in documentation of quality reports for construction projects.

Name	Duties/Responsibilities	Qualifications
Design Quality Assurance Manager (DQAM)	<ul style="list-style-type: none"> – Implement Design QA plan. – Train all design engineers in the design quality process. – Audit design packages and release for construction plans for conformance with the QMP. – Audit and certify all design packages for release to construction for compliance with the QMP. – Ensure appropriate QO Engineers review all plan sheets for conformance with the RFP standards and criteria. – Certify progress payments for the design meet the quality requirements. 	<ul style="list-style-type: none"> – Professional Engineer in Washington. – Key person on project. – Experience in managing design of highway projects.
Environmental Compliance Manager (ECM)	<ul style="list-style-type: none"> – Must be on site for the duration of both the design and construction periods. – Prepare Environmental Compliance Manager reports for compliance with environmental regulations and permits. – Audit document compliance. – Document and monitor any nonconformance areas until conformance is achieved. – Review design of project Best Management Practices (BMPs) and mitigation measures. – Verify implementation and effectiveness of BMPs and mitigation measures to avoid and minimize environmental impacts. 	<ul style="list-style-type: none"> – Key person on project. – Experience working with transportation and environmental resource agencies obtaining permits and/or permit modifications. – Experience working with engineering teams to develop designs that avoid and minimize adverse and community impacts.
Environmental Inspectors	<ul style="list-style-type: none"> – Assist in the review of the design and implementation of environmental BMPs and mitigation measures. – Assist in the verification of regulatory compliance. 	<ul style="list-style-type: none"> – Wildlife Biologist. – Watershed Scientist. – Soil Scientist/Revegetation Specialist – Professional Environmental Engineer.
Sampling and Testing Personnel	<ul style="list-style-type: none"> – At the direction of the CQAM or his/her designated representative, take appropriate samples and tests necessary to meet the requirements of the contract, specifications and plans. – Submit documentation to CQAM on a daily basis. 	<ul style="list-style-type: none"> – Concrete Sampling—ACI Concrete Field Testing Technician Grade I or WAQTC Concrete Testing Technician. – Aggregate Sampling and Testing—WAQTC Aggregate Testing Technician. – In-Place density testing—WAQTC Asphalt Testing Technician.
Staff Inspectors	<ul style="list-style-type: none"> – Inspect the work in a variety of areas including embankment, PCC paving, Structural concrete placement, utilities, etc. – At the direction of the CQAM, inspect aspects of the work in which he/ she is qualified. – Daily Inspection Reports. – Prepare Materials Receiving Report to document inspection of materials brought to the job site. 	<ul style="list-style-type: none"> – <i>Embankment</i>—Western Alliance for Quality Transportation Construction (WAQTC) Embankment and Soils Tester – <i>Structural Concrete</i>--ACI Concrete Field Testing Tech. Grade 1. – <i>Pavement and batch plant</i> ACI Concrete Field Testing Technician Grade 1. – <i>Structural Steel</i> -- AWS Certified Welding Quality Control Inspector. – <i>Asphalt Hot-mix plant and asphalt paving</i> – Precast/Prestress Concrete—ACI Concrete Field Testing Technician Grade 1 and PCI QC Personnel Certification, Levels I & II.

Name	Duties/Responsibilities	Qualifications
Laboratory Technician	<ul style="list-style-type: none"> – Perform tests on various materials within the laboratory environment and in accordance with applicable procedures. 	<ul style="list-style-type: none"> – <i>Concrete Lab Technician</i>—ACI Concrete Field Testing Technician, Grade I. – <i>Asphalt Mix Technician</i>--WAQTC Superpave Mix Design Technician. – <i>Generic Lab Technician</i>—Qualified Laboratory Testing Technician.
Pile-Driving Analysis	<ul style="list-style-type: none"> – Wave equation for pile driving hammer. – Review pile Geotech data. – Dynamic monitoring of pile driving. – CAPWAP analysis. 	<ul style="list-style-type: none"> – 5 years of experience in monitoring the driving of steel piles with PDA and in performing CAPWAP analyses.
QA Survey	<ul style="list-style-type: none"> – Monitor and spot check staking data developed by the Construction Surveyor for compliance with QMP. – Quality Assurance audits of field construction surveying activities by verification of actual surveyed points. – At established checkpoints, certify that survey data has been located, checked, and verified by the Construction Surveyor. 	<ul style="list-style-type: none"> – Professional Land Surveyor in Washington. – 20 years of experience with construction surveying. – Experience with survey Quality Assurance/quality control.
Community Involvement and Project Information Manager	<ul style="list-style-type: none"> – Responsible for managing public information and community involvement deemed necessary by WSDOT. – Will interact with WSDOT staff in a team effort to educate and help promote public satisfaction. – Will provide media interviews and information and deliver messages and materials consistent with WSDOT's messaging and standards. – Create, reproduce and distribute flyers and graphics to educate the public about the project and construction and traffic impacts. – Quickly and thoroughly respond to community and commuter complaints. 	<ul style="list-style-type: none"> – Key person on Project. – Full time, paid professional public information and media outreach working with large public works projects. – Experienced in all aspects of providing public information on public works projects. – Experience writing and implementing a public information plan. – Experience in communicating with frustrated citizens and resolving their concerns.
Structures Design Manager	<ul style="list-style-type: none"> – Responsible for ensuring that the bridge and structures design is completed and the design criteria requirements are met. – Must be on site whenever structural design activities are being performed. 	<ul style="list-style-type: none"> – Key person on project. – Structural Engineer license in Washington. – Experience designing or managing the design of bridges and structures in Washington. – Must be familiar with all design codes. – Must be knowledgeable of current practice for the seismic design of bridges and structures.
Office Assistant	<ul style="list-style-type: none"> – Under the direction of the PM, assist in labeling, filing, typing and data entry functions as required. – Progress payment documentation/certification checking all documentation – Utility coordination and correspondence – Potential change orders – Nonconforming work, nature, corrective action, track resolution – Coordinate sampling and testing schedule – Track quality staff, labs, and equipment certification – Track all submittals, forward for approval, etc. – Review environmental documentation 	<ul style="list-style-type: none"> – Word Processing skills. – Basic Computer Skills. – High level of filing and organizational skills. – Experience in highway construction inspection. – Experience in reading specifications, plans and drawings. – Experience in construction testing, sampling and reporting. – Experience in documentation of quality reports for construction projects.

Name	Duties/Responsibilities	Qualifications
Document Control	<ul style="list-style-type: none"> Organize and maintain records and documents pertinent to QO activities 	<ul style="list-style-type: none"> Experience with Document Control System Software. Basic Computer Skills. Excellent organizational skills.
Deputy Project Manager	<ul style="list-style-type: none"> Review Quality Issues, NCR's and Weekly Inspection Reports. Cooperate in the development of strategies to correct quality issues. Review plans for overall constructability. 	<ul style="list-style-type: none"> Experience in working with Quality Control Inspectors and Testers.
Construction Manager	<ul style="list-style-type: none"> Coordinate with CQAM on the schedule for work elements to ensure adequate staff is available for quality control inspection, sampling and testing. Cooperate in the development of strategies to correct quality issues. Develop construction procedures and work plans to meet all quality control requirements. Meet with inspectors to review quality control process requirements prior to starting any work element. Provide training to all personnel in the appropriate procedure to be used for the work element under construction. 	<ul style="list-style-type: none"> Experience in working with Quality Control Inspectors and Testers. Experience in construction activities that they will lead. Experience in working with utilities and other third parties regarding quality control.
Construction Staff	<ul style="list-style-type: none"> Execute work process according to work plans and procedures to meet all quality control requirements. 	<ul style="list-style-type: none"> Experience in the appropriate craft or labor activity in which they are required to work. Employees of contractor or subcontractor
Construction Q/C Coordinator	<ul style="list-style-type: none"> At the direction of the Project Manager, or his designee, manage the taking of quality control samples and test to assure that the Design-Builder's means and methods during construction are sufficient to meet the requirements of the contract, plans, and specifications. Submit documentation to Construction Manager on a weekly basis. 	<ul style="list-style-type: none"> Qualified Tester / Embankments and Density, Aggregates, Asphalts, and Laboratory testing. 10 years of related experience.
Process Quality Control Staff	<ul style="list-style-type: none"> Providing quality control sampling and testing to develop and refine work processes to meet quality requirements and provide conformance to the contract, plans, and specifications. Submit documentation to the CM on a daily basis. 	<ul style="list-style-type: none"> Qualified Tester / Concrete Sampling—ACI Concrete Field Testing Technician Grade I or Concrete Testing Technician. Qualified Tester / Aggregate Sampling and Testing—Aggregate Testing Technician. Qualified Tester / n-Place density testing—Asphalt Testing Technician.
Fabrication QA Manager	<ul style="list-style-type: none"> Implement the fabrication QA Plan Manage inspection and testing of all off site fabrication work. Ensure all fabrication QA inspection staff has appropriate training and certification. Maintain NCR log. Schedule quality checkpoints. Maintain calibration records for fabrication test equipment. 	<ul style="list-style-type: none"> Professional Engineer in Washington Ten years experience in fabrication inspection and fabrication quality assurance, including qualification in welding, structural coating, precasting
Fabrication QA Inspectors and Testers	<ul style="list-style-type: none"> Daily fabrication inspection reports. Prepare materials receiving report to document inspection of materials during fabrication. 	<ul style="list-style-type: none"> Must be qualified in test standards they perform, must use verified equipment. AWS Certified Welding Inspector

Name	Duties/Responsibilities	Qualifications
Design Q/C Coordinator	<ul style="list-style-type: none"> – Manage design QC process for all design. – Assign qualified design checkers to check design work. – Maintain record of internal quality activities and prepare a monthly progress report to summarize internal quality activities. 	<ul style="list-style-type: none"> – Professional Engineer in Washington.
Environmental Compliance Manager	<ul style="list-style-type: none"> – Assist in developing of an environmental compliance checklist for the project in accordance with the Fugitive Dust Control Plan and the Stormwater Pollution Prevention Plan. – Review design and inspect construction for compliance with environmental regulations and permits. – Document compliance. – Document and monitor any nonconformance areas until conformance is achieved. – Prepare a weekly Environmental Compliance Report. 	<ul style="list-style-type: none"> – Professional Engineer in Washington. – Experience in the complying with environmental permits. – Experience in environmental monitoring for various aspects of transportation projects.
Design Manager	<ul style="list-style-type: none"> – Direct and manage all design development, plan releases and specification releases. Provide adequate staff to meet Design-Builder schedule. Maintain budget and schedule, report on these on a monthly basis. – Conduct Design Reviews. – Compile and maintain documentation of design reviews and oversight reviews. – Certify the release for construction plans meet all project criteria and the contract. 	<ul style="list-style-type: none"> – Professional Engineer in Washington.
Design Checkers	<ul style="list-style-type: none"> – Perform complete check of all calculations, plans, special provisions, and estimates evaluating appropriate engineering practice, conformance with the contract and project criteria and overall completeness for implementation in the field. 	<ul style="list-style-type: none"> – Professional Engineer in Washington with a minimum of 3 years of experience in the related discipline that is being checked.
Design Engineers	<ul style="list-style-type: none"> – Perform all engineering tasks to complete their portion of the plans, special provisions or estimate in accordance with project criteria, standards, the contract and the QMP. 	<ul style="list-style-type: none"> – Engineer with EIT. – Technician with NICET Level III or IV.

1.4 Reporting Responsibilities

1.4.1 Lines of Authority

The Design-Builder is responsible for measuring the quality of the work product and demonstrating to the WSDOT that the Work meets the requirements of the contract.

As shown by the Quality Organization Chart (Figure 1), the PM leads the Quality Organization with direct authority over the CQAM, DQAM, and ECM. The PM reports directly to the Design-Builder. All periodic reporting, nonconformance issues, and concerns about quality will be forwarded to both the WSDOT and the Design-Builder.

Contractually, the QO is part of the Design-Builder's organization.

The CQAM is responsible for overall QA inspection and testing on the Project and manages the QA Inspectors and QA Sampling and Testing Personnel. The CQAM coordinates with the Construction Manager to ensure that all elements of the project are inspected and tested in accordance with the QMP.

1.4.2 Communication Requirements

The DQAM and the CQAM will communicate daily in person or by phone with the WSDOT Engineer, the Design Manager, and the Construction Managers. The Quality Organization's Daily Inspection Reports and Field Observations are available for all entities to inspect at all times. The inspection reports are summarized on a weekly basis and sent to both the WSDOT and the Design-Builder.

The DQAM will prepare a monthly summary of the design packages audited during that period. The summary will include a description of any quality issues identified and the resolution of those issues.

Communication of quality issues will be done in a timely manner to provide adequate time for the issues to be resolved without delaying the schedule. Quality issues will be resolved at the lowest possible level, often at the site, with the appropriate inspector and foreman agreeing on a solution.

1.4.3 Staffing Levels

The quality organization will provide a PM, CQAM, DQAM, ECM, Staff Inspectors, and sampling and testing staff to meet the project schedule. The staffing levels indicated in the following chart are based on a preliminary construction schedule and represent an approximate number of personnel needed per month. The staffing levels will be adjusted on a monthly and weekly basis, depending on the work being accomplished on each construction day, so that all work will be inspected and tested according to the QMP.

Utility owner inspection staff will be given a monthly look-ahead schedule and one-week notice as to when their work will be constructed to allow them to schedule their inspections accordingly.

Table showing QM organization staffing by month of the project to be developed by the Design-Builder and included in its proposal

FIGURE 3: QO FULL-TIME EQUIVALENT EMPLOYEES (FTEs)

2.0 Administration

2.1 Personnel Qualifications and Certifications

All personnel on the Project will be made aware of the quality requirements of their position. All personnel will be trained in their job duties and the skills necessary to complete their work right the first time. The following chart lists the types of personnel and the required training.

TABLE 1: STAFF TRAINING REQUIREMENTS					
Staff Level	Safety	Design Quality Control	Constr. Quality Plan	Work Element Training	Specification and Construction Requirements
Construction Management Personnel	X		X		X
Design Management*	X	X	X		
Design Engineers*	X	X			
Construction Foremen	X		X	X	X
Crafts and Labor	X			X	X
Quality Management*	X	X	X	X	X
Inspectors	X		X	X	X
Sampling and Testing	X		X	X	X

*Safety training only needed for those required to visit the construction site.

Safety training will be in the form of weekly toolbox meetings presented by the Design-Builder and other specialized training such as Railroad Safety training.

Design quality training is presented by the DQAM. There are two versions: One is for the management staff to understand the quality requirements of design; the second is for the design engineers to develop a detailed understanding of the quality process. Each of these sessions is from one to two hours in length.

The CQAM develops the construction quality training for the Project. There are three versions of this training.

One version is for management so they understand the construction QMP processes, including the lines of authority and issue resolution procedures. This session will be approximately one hour in length.

The second version is less formal, consisting of a preparation meeting for the foremen on the daily inspection, sampling, and testing procedures necessary for their work. The CQAM or his designee will complete training of any work element to ensure the foremen understand the requirements of the QMP and specifications for that element. The CQAM will provide the

foremen a review of the sampling and testing requirements for the element and will discuss development of work procedures to meet the quality goals. In addition, the sampling and testing personnel are involved in discussing the quality plan for each work element. These preparation meetings are 15 to 20 minutes in length and occur prior to beginning any work element or as a review of the requirements at the start of each day. Refresher training will be conducted as needed, at the weekly design staff meetings and the Design-Builder's weekly toolbox meetings where the CQAM or their designated representatives will provide feedback on process and resolutions on quality issues.

The third version is the formal training for CQA inspectors. Each Inspector goes through this intensive, two-week long training, 40 hours per week, before performing CQA duties.

Details of the training to be developed after award of the project.

2.2 Document Control

Control of quality data is extremely important for establishing the permanent record documenting quality on the project. Documents will be filed and controlled in accordance with the project Document Control Plan (Appendix D3). All documents will be maintained for the duration of the Contract and organized, indexed, and delivered to the WSDOT upon FOA as well as within five (5) Working Days of receipt of any such request from the WSDOT.

Files will be maintained at three separate locations; the Design-Builder's engineer's office, the on-site Project office, and the QO field office. All pertinent documents will be maintained in an organized and contained manner at those three sites.

The Design-Builder will establish and maintain its own document control system (DCS) in accordance with Section 2.1.6 of the RFP for electronically storing QA inspection and testing data.

Digital cameras and video recorders shall be used by the QO to document construction of the Project.

2.3 Document Revisions

The Quality Management Plan (QMP) and Safety Plan are Controlled Documents. Controlled Documents are those that are used on an on-going basis throughout the life of the Project. Special distribution, tracking, and revision procedures are established for these documents to ensure that Project participants are using only up-to-date versions.

The author, prior to distribution, numbers hard copies of each Controlled Document and maintains a log to document the individual that each copy is assigned to.

When revisions to a Controlled Document are required, they are reviewed and approved by all parties who participated in the original review and approval. After the revisions are approved,

they are distributed by formal transmittal to all official holders of the document. The PM or his designee performs random audits on the Controlled Documents and the logs to verify that all copies being used are up-to-date and that the logs are current

2.4 Audits

2.4.1 Schedule of Audits

The following schedule specifies a series of comprehensive periodic audits to determine the effectiveness of the Quality Management Plan.

TABLE 2: SCHEDULE OF AUDITS	
Item	Audit Date
Design Plans and Special Provisions	As necessary to audit each construction release package for conformance with the quality management plan.
Design Changes	As necessary to audit each released design change for conformance with the quality management plan.
Construction and Testing	Once a month the auditor will review paperwork for all construction elements worked on in the last month for conformance with the quality management plan.
Offsite Plants	Once every 4 months during the construction season.
Testing Labs	Once every 2 months during the construction season.

2.4.2 Audit Personnel

The PM will designate appropriate trained personnel of the QO to perform the required audits for the project. These individuals are not involved in either the actual design or construction process and will perform audits in accordance with the written procedures or checklists.

2.4.3 Nonconformance Notices for the Quality Process

Should the auditor find areas of nonconformance within any of the quality process areas, a notice of nonconformance will be written. The nonconformance will be carefully described and documented by the auditor. The PM, CQAM, and DQAM will review and sign-off on the nonconformance notice. If trends occur in nonconformance, the PM, CQAM, or DQAM will develop process changes to eliminate the nonconformance in the future. This plan will include a schedule for implementation, required training, and a follow-up audit once the new procedure is in place.

2.4.4 Documentation Procedures

The audits are completed on standardized forms with standard checklist information used for evaluating compliance with the QMP.

2.5 Design Changes

2.5.1 Notice of Design Change

For design changes made after drawings have been released for construction, the Design Manager will send notices of design changes (NDC's) to the DQAM, CQAM and the WSDOT. The NDC is sent to the distribution list shown on the form notifies both the Construction Manager and the WSDOT of necessary changes to previously released plans to meet the contract, the project criteria, or the specifications.

Each NDC contains a complete description of the change and the plan sheet numbers or special provisions the change relates to. Also, the NDC contains the date when the updated plans or special provisions will be ready for release to the field. The Design-Builder will not construct any items affected by these changes until after the updated plans have been released.

2.5.2 Control of Design Changes

Changes to released plans or special provisions are implemented through the release for construction process. Each time a plan or special provision is released it is given a sequential number of the release and the date it is released. This number and date are tracked by the document control system to provide control of each plan change that is approved for construction.

The plan sheets or special provisions have the changed area clouded (preferably) or a comprehensive boxed note on the plans explaining the changes made to the documents. The CADD standards and special provision procedures provide requirements on the appropriate methods, line styles, levels, weights and color of highlighting changes.

2.5.3 Quality Checks on Design Changes

All plans, calculations, and special provisions with design changes must meet the same quality control review and checking procedures as outlined in the Section 4 (Design) of this QMP. The Design Manager or Construction Manager may ask for the review to be expedited if the construction schedule is affected by delaying the release of these changes. The Design Manager meets with the WSDOT and sets an expedited review schedule for the Design Change packages to meet the construction schedule requirements.

2.6 As-Built Drawings

The Designer prepares as-built drawings for the project. These drawings conform to the CADD standards identified in the RFP. The as-built drawings provide sufficient detail for the WSDOT to use the drawings for future activities along the roadway.

2.6.1 Data Gathering Procedures

The Surveyor prepares field notes and sketches during the construction of all project elements including drainage, utilities, ATMS conduit, signal conduit, and other underground features not visible at the surface. These field notes include enough survey data to locate the features within

the project coordinate system. This data is then given to the as-built drafter to input into the CADD drawings.

2.6.2 Responsible Party

The Surveyor is responsible for the location of all as-built features. The Designers CADD drafting person/persons will take the survey information and will incorporate the information into the CADD drawings.

2.6.3 As-Built Drawing Procedures

The field information is gathered and documented at the construction site by the Survey Crew Chief. The information is drafted into the CADD drawings. The drafter annotates the information after giving final locations for all features as mentioned above. The CADD standards used are the Department CADD standards.

2.6.4 Quality Control Checking

The survey crew chief will check the information in the field notes and certify their accuracy prior to sending them to the office for incorporation into the as-built drawings. This check will include a visual inspection of the job-site and a check of the calculations and survey notes within the field book for accuracy. The check of the calculations and survey notes is done using the design calculation checking procedure outlined in Section 4 (Design) of this QMP.

An engineer will check the as-built information with the field book to confirm the accuracy of the as-built drawing. The engineer will follow the checking procedures for design drawings outlined in Section 4 (Design) of this QMP.

The QO will provide periodic audits of the as-built drawings to evaluate conformance with this QMP.

2.7 Review and Submittal Schedule

The designer will provide a list of reviews for each of the Design Packages. The list will include the list of plans, reviewers, and the location and date of the review meeting. These reviews help coordinate the design features with the WSDOT's personnel, the QO and the contractors; the various design team disciplines, local cities, and the utility owners. The WSDOT will be kept up to date on the exact timing of reviews with day-to-day communications.

2.8 Progress Payment Documentation

2.8.1 Manufacturers Certificates of Compliance

The QO obtains and tracks manufacturers' certificates for all materials accepted by certifications and documents receipt of the WSDOT's "Approved for Shipment" certificates. A manufacturer's certificate of compliance is used for acceptance of materials as identified in the RFP.

2.8.2 Quality Documentation

The QO will review monthly progress payment requests to ensure that acceptable quality documentation is on file for all payment items.

Progress payments are made by percent complete for each schedule activity number; therefore, all quality documentation will be filed and controlled by project schedule activity number. For each progress payment, the quality data for each progressed schedule activity number will be reviewed to establish that each item in the progress payment has met all requirements of the contract, the plans, and specifications. The DQAM and CQAM certify that the quality requirements have been met for all activities for which payment is being requested.

Progress payments for the design are by percent complete for each activity number. These activity numbers are related to various release packages. The design quality documents are filed and controlled by the release package number. All release packages contain the release package number and the related schedule activity number for reference. The DQAM certifies the progress payments for the design have met the quality requirements.

2.9 Contract Price Adjustments

A quality value has been established for various materials, as provided in the RFP. Any deviations from those specifications are subject to Contract Price reductions as defined in the RFP. Calculations for price reductions are made by the CQA organization and submitted to WSDOT for approval.

The WSDOT bases any price reduction on the documentation of testing and inspecting results provided by the CQA organization, the quantity of noncompliant materials, and/or additional owner verification testing (OVT).

2.10 Documentation

All information required by the Contract that is necessary to document acceptable performance of the work will be maintained in an organized manner and available daily to the WSDOT. All quality, inspection and test activities, delays encountered, nonconforming work, and corrective action in regards to nonconforming work will be documented. All this information will be stored in a database as described in the RFP.

2.10.1 Daily Manpower and Equipment Records

The Project Manager or his designee will maintain daily manpower and equipment records for all construction-related activities and will require all contractors and subcontractors to provide this information.

2.10.2 Daily Occurrence Log

The CQAM will maintain a daily occurrence log documenting:

- Unusual weather
- Asserted Force Majeure events

- Any conditions which may cause significant delay, disruption, or interference with the progress of work
- Potential change orders or non-conformance items
- Significant injuries to a person or property, accidents, and safety problems
- All labor materials and equipment expenses incurred
- Other occurrences not anticipated on any given day

The log will provide a brief overview of the monthly plan activities under construction on that day. The log will be filed by day and month in the QO field office.

2.10.3 Hazardous Materials

The ECM will document any hazardous material uncovered at the construction site. The documents will include discussion of notification of WSDOT and any other agency investigating the hazardous material and the actions taken to resolve the hazardous material condition.

2.10.4 Utilities

The CQAM will maintain inspection information on all utility relocations on the project. This information includes sign-offs from owners that their utilities were relocated according to the plans, standards and specifications.

2.10.5 Specific Items of Work

All Items of Work (i.e. MSE walls, geotechnical, surveying, public involvement, etc.) will be documented as indicated in the RFP.

2.10.6 DBE, EEO, Labor Compliance

All required documents showing compliance with the DBE, EEO, and Labor Compliance requirements of the Contract Documents will be filed as such within the document control system.

2.10.7 QO Monthly Certification

As part of the monthly progress report, the QO will provide a written certification signed by the DQAM and the CQAM, indicating that the QMP and all of the measures and procedures provided therein are functioning properly and are complied with fully.

2.10.8 QO Weekly Reports

The QO will maintain and submit weekly records showing that all required activities and/or tests have been performed, including the following:

- Type, number, and results of all current quality management activities, including reviews, inspections, materials analysis, tests, audits, and monitoring of Work performance
- Closely related data, such as the qualifications of personnel and the procedures and equipment used
- Identity of the inspector or data recorder, the type of test or observation employed, the results and acceptability of the Work
- Minutes of all QC meetings

- The nature of any nonconforming Work, causes for rejection of Work, etc.
- Proposed corrective actions(s) for any nonconforming Work, corrective action(s) taken, and results of corrective action(s)

2.10.9 Materials and Equipment Conformance Record

Documents will be maintained to show that materials and equipment conform to the procurement requirements. The material is available for inspection 24 hours before installation or use of such material and equipment. The documents will be retained at the job site and identify specific requirements such as contract documents, codes, standards, and specifications met by the purchased material and equipment. The WSDOT has reserved the right to inspect and review these documents at any time.

2.10.10 Weekly Scheduling Notice to the WSDOT

The CM will notify the WSDOT in writing, by Friday noon of each week, of the planned construction activities, including fabrication within 60 miles of the project. For activities (fabrication, etc.) occurring more than 60 miles from the project, notification is given at least 10 working days prior to starting the planned work.

2.10.11 Substantial Completion

The QO reviews the Project Manager's written notice to the WSDOT regarding substantial completion and will certify that the Designers and contractors have complied with the requirements of the Contract.

2.10.12 Final Inspection

At the completion of work, the CQAM, the PM, and the WSDOT jointly conduct a final inspection of the project. The final inspection includes inspection of the completed work, associated as-built documents, certifications, and other documentation and contractor punch list item review. The inspection is accomplished within five working days of notification that the project is ready for final inspection.

During the inspection, quality control documentation may be reviewed. The WSDOT and CQAM jointly agree upon the list of nonconforming work and the corrective action to be taken, along with an agreed-upon completion date for the corrective action.

The CQAM will ensure that each deficiency identified during the final inspection is corrected before the agreed-upon completion date.

2.10.13 Final Certificate of Compliance

The Project Manager submits a Certificate of Compliance signed by the Project Manager and the CQAM indicating that all materials incorporated in the project conform to the contract requirements.

2.10.14 Final Owner Acceptance (FOA)

The WSDOT has sole responsibility and authority for the FOA of all Work.

3.0 Investigations and Testing

3.1 Procedures to Ensure Consistency and Quality of Materials and Products Supplied by Vendors

The QO inspects all materials brought to the job site. The inspector documents the type of material, the general visual condition of the material, and indicates that the material is being stored and handled according to manufacturers' recommendations, and specifications. The QO inspector examines the bill-of-lading, the certificate of compliance, and the onsite material to document that certifications are complete for the material. A copy of the materials compliance certification is included with the inspector's report. The QO inspector uses the Materials Receiving Report form for this documentation. All of the documents for this inspection are filed under the activity number as outlined in the document control section of this plan.

All materials and products delivered to the job site are marked and tracked in accordance with Section 5.3 (Materials) to ensure only acceptable materials are used and any rejected materials are removed from the job site.

The QO inspector documents in his daily inspection reports any issues with the acceptability, handling, or storage of materials and notifies the Project Manager immediately. The Design-Builder corrects these issues within 24 hours or the CQAM writes an NCR.

3.2 Procedures to Ensure Quality and Documentation of Field Investigations

All field investigations are subject to review for data consistency by a qualified senior engineer. These reviews are documented and any abnormalities checked by the senior engineer. All review comments and subsequent actions taken to provide consistent data are documented. These review documents become part of the design quality control documents for the appropriate Schedule Activity ID.

All geotechnical information from field investigation and testing is checked according to Section 4.3 (Design Checking) of this QMP. The engineer responsible, or a senior engineer under his direction, evaluates data for consistency. Any abnormalities are identified, and tests are repeated or extra borings taken to determine the actual conditions. The quality process is audited by the DQAM for conformance with the overall plan. Any discrepancies are addressed by comparison with borings and tests done from the RFP documents. Should discrepancies still be unresolved, an independent geotechnical firm is used to conduct verification investigations and tests.

The construction surveyor checks field surveying and project mapping coordinate systems per Section 8.0 (Surveying) of the QMP. The QO Surveyor audits the survey data sheets and calculations to document conformance to the QMP. Field cross sections are taken at various locations to determine the accuracy of the computer digital terrain model prior to using the model prior to using the model for design.

3.3 Procedures to Ensure Laboratory Qualifications

All QA testing will be performed by a WSDOT approved laboratory reporting directly to the CQAM. The laboratory will meet the requirements of AASHTO R-18 for qualified testers and calibrated/verified equipment and will accomplish the testing according to the test procedure they are performing. A Laboratory Quality Systems Manual will be developed and maintained. The manual will included:

Staff qualifications, position description, and qualification process

Listing of the test procedures used

Equipment, including verification and calibration procedures and inventory

Test reports, worksheets and forms

Sample management

Diagnostic and corrective action

Quality systems review

The CQAM will develop and maintain a list of the approved labs for the project.

4.0 Design

4.1 Quality Control Organization and Responsibility

The organization is outlined in Section 1 (Management) of this QMP.

4.2 Overview of Design Quality Program

The design quality program consists of the following general steps:

- 1. Prepare Design Documents.** The designer prepares the design documents, using the established design criteria for the project and with appropriate inter-discipline coordination (via weekly meetings, written communications, etc.). The Designer and the WSDOT will form design teams for Maintenance of Traffic, Illumination, Signals and ITS that will meet bi-weekly during the design phase and monthly, thereafter. An initial workshop will be held for each of these design elements prior to the start of the design work on them.
- 2. Check.** The designer checks the design documents following the steps detailed in Section 4.3.
- 3. Audit.** The DQAM audits the design documents in accordance with Section 4.4 to verify that the documents have been properly checked.
- 4. Reviews.** The design documents are reviewed and comments are resolved in accordance with Section 4.5.
- 5. Revisions.** The designer makes the necessary revisions to the design documents to address the comments and to advance the design to the next review level, again with appropriate inter-discipline coordination.
- 6. Repeat check/audit/review/revisions cycle** through each required review described in Section 4.5.
- 7. Prepare signed and sealed documents.** When the designer has completed the design documents and addressed all review comments, the designer prepares signed and sealed documents, and transmits them to the DQAM, indicating that the documents are approved by the Designer for construction.
- 8. Releases for Construction (RFC).** The DQAM distributes the signed and sealed design documents for construction in accordance with Section 4.6.
- 9. Acceptance of Final Design.** WSDOT acceptance of the final design will not occur until after WSDOT acceptance of construction.

4.3 Design Checking

General checking procedures applicable to most design documents are detailed below in Section 4.3.1. Special checking procedures for computer programs and structures are detailed in Sections 4.3.2 and 4.3.3, respectively.

4.3.1 Design Plans, Specifications, Calculations, Reports, and other Design and Construction Documents

All plans, specifications, calculations, reports, and other design documents are checked using a red-yellow-green color-code system, which is defined below. A senior experienced engineer checks all designs. All documents are checked for conformance with the criteria, standards, and the Contract. The person checking the document must be a Professional Engineer registered in the State of Washington who has not been involved in the particular aspect of the design being checked.

Check: The checker makes a copy of the calculations, plans, or revisions and uses this copy for checking. This copy has a checkprint stamp for all persons involved in the checking process to sign-off. The stamp also includes the appropriate release package number and schedule activity number, the initials of originator of the document, and the date. The checker validates all information on the document, using the color-code system as follows:

- Yellow = information is correct.
- Red = an error in the document
- Pencil or blue is a comment on the calculation that is not necessarily an error

The checker then signs and dates the checkprint stamp.

Backcheck: The backchecker (usually the originator of the document) then reviews the red and blue/pencil comments. If the backchecker agrees with the comments, he places a green check next to the red. If the backchecker does not agree with the comments and then explains to the checker a valid reason why the original item is correct, he then writes the word “stet” in green over the red marks to indicate that the red is no longer valid and that the checker has withdrawn his comment. Once all comments are reviewed and approved, the backchecker signs and dates the checkprint stamp.

Update: The updater (usually the backchecker/originator) makes the revisions to the original document according to the agreed-upon changes marked on the checkprint. Once updates are complete, the updater circles the changes made in green and signs and dates the checkprint stamp. The checker also identifies the design engineer and the checker on the original design documents.

Recheck: The updated original and the checkprint are given to the rechecker (usually the checker) who reviews the changes and verifies that they were made completely and correctly. The rechecker then yellows over the red marks on the checkprint and signs and dates the checkprint stamp. The rechecker also verifies that the design engineer and checker have been clearly identified on the original design documents. The rechecker forwards the completed checkprints to the Design Manager for filing in the design files.

4.3.2 Computer Programs

Specific software programs denoted in the RFP for use by design are considered validated and do not need to be verified. Upon written request, the WSDOT can specify other programs that do not require formal verification. All other spreadsheets and computer programs must be verified.

A spreadsheet may be verified by performing hand calculations. The hand calculations are checked using the red-yellow-green color-code system. A comparison is made between the computer-generated output and the hand calculations. The spreadsheet and calculations are then audited by the DQAM and if adequately verified, added to the list of software products verified for the Project.

Vendor supplied computer programs may be verified by any of the following methods:

- By using the hand calculation method as described for spreadsheet verification
- By using the same input in another validated computer program and comparing output
- By supplying documentation from the manufacturer or program writer verifying the accuracy of the program.

Once a spreadsheet or computer program is added to the list of products verified for this Project, the input is checked using the complete red-yellow-green color-code system described in Section 4.3.1, above. All computer-generated output is reviewed for reasonableness and spot checked for accuracy.

4.3.3 Structures

For all structural calculations, independent checks are performed on all structural calculations prior to the 100% review to verify adequacy of design.

4.4 Design Audits

After each design package has been checked and prior to distribution of the package for review or RFC, the DQAM performs an audit to verify that the documents have been checked in accordance with the procedures defined in Section 4.3. If the design package has previously been through a review (per Section 4.5), the DQAM also verifies that all prior comments have been resolved and incorporated, as applicable.

The DQAM uses the Design Quality Audit Checklist (Section 4.10) to perform the audit, and his/her signature certifies the following points, as indicated on the checklist:

- The design has been checked in accordance with the approved QMP.
- The design has been reviewed to confirm it is in accordance with the Contract requirements.
- No design exceptions exist that have not previously been approved by the WSDOT.

If the DQAM finds a nonconformance with the quality process, the documents are returned to the design engineer to bring the package into compliance. Once the audit finds all documents in conformance, the DQAM completes and signs the Design Quality Audit Checklist to document that the quality process has been followed.

The DQAM conducts the audits in a diligent and timely manner such that the design schedule is maintained. The WSDOT has access to all audit documentation.

4.5 Design Reviews

To allow the WSDOT, the QO, the designer's discipline leads, the project manager, and other stakeholders (e.g. affected cities and utilities) to oversee and have input on the design as it is developed, a series of specific design reviews are performed on all design packages at certain milestones. The review process consists of distribution of design packages and associated backup information, preparation of written comments by reviewers, and a comment resolution meeting.

4.5.1 Sequence of Milestone Reviews

The sequence of milestone reviews is described in this section. Procedures for these milestones reviews and for other special reviews follow in Sections 4.5.2 and 4.5.3, below.

30% Review

When the design (or an element of the design) has been developed to the 30% stage and checked and audited, a formal design submittal is assembled and distributed for review, including design drawings, environmental requirements, and any other relevant design information. The review follows the procedures defined in Section 4.5.2, below, and consists of reviewing roadway geometry, offsite drainage hydrology, geotechnical approach, and other preliminary design elements as applicable. For structures, this review is the Type, Situation, and Layout (TSL) review of Sheet Ones, calculations, and other pertinent data.

60% Review

When the design has reached the 60% design stage and has been checked and audited, a formal design submittal is assembled and distributed for review, including plan sheets, technical memos, reports, selected calculations, liquefaction/lateral spreading analysis, bridge seismic strategy memorandum, pile design calculations, and other pertinent data. The review follows the procedures defined in Section 4.5.2, below.

On certain distinct elements of the design (such as MOT for a portion of the project), the designer may choose to skip the 60% review. This is done with the designer's understanding that the Department and all other reviewers will make a complete review at the 100% stage and that the designer is obligated to address all comments that are made.

100% Review

When the designer has completed the design package to 100% and the package has been checked and audited, a formal design submittal is assembled and distributed for review, including plan sheets, calculations, specifications, and other pertinent data. The review follows the procedures defined in Section 4.5.2, below. Any changes to the documents resulting from WSDOT review comments are checked in accordance with Section 4.3 and audited in accordance with Section 4.4.

RFC Submittal

After the 100% comments have been addressed and the design documents have been checked and audited, a final design submittal package is assembled and distributed to the designer for release for construction.

RFC designs for bridge foundations shall include submitting to WSDOT the geotechnical evaluation memo, geotechnical pile design calculations, and the seismic design memo.

4.5.2 Review Procedures**4.5.2.1 Reviewers**

Senior engineers who have sufficient experience to provide appropriate critique of the methods, assumptions, and good engineering practice for the discipline review design submittals. The reviewers include representatives of the following disciplines as appropriate for the package being reviewed: construction, geotechnical, drainage, roadway, structures, utilities, traffic, right-of-way, and the WSDOT personnel. Qualified representatives from local cities and utility owners are included in reviews that affect their infrastructure or affect agreements with the WSDOT on other aspects of the project. The WSDOT will be invited for maintainability reviews or other reviews pertinent to their areas of expertise. The WSDOT is responsible for inviting personnel as appropriate. The roles of various design reviewers are summarized in Table 3, below.

TABLE 3: ROLE OF DESIGN REVIEWERS	
Reviewer	Role
WSDOT personnel	Review the plans for conformance with the discipline criteria and contract requirements.
Design QC Organization	Review the plans, calculations, and other design documents in accordance with the approved Design Quality Control Plan.
Design QA Organization	Review and certify to the Department that the Design QC process took place and that the design meets contract requirements.
Production Representative	Review the plans for overall constructibility.
Senior Design Discipline Leads i.e. Roadway, Structures, Drainage, Utilities, Traffic, Geotechnical	Review the plans for conformance with criteria, the contract and sound engineering practice. Also review for inter-discipline coordination: verify there are no conflicts, omissions, or misalignments between adjacent work.
Environmental Compliance Manager	Review the plans for compliance with the environmental commitments and permits on the project.
Utility Owners	Review the plans for conformance with respective standards and requirements.
Local Cities	Review plans for conformance with respective standards and other issues concerning the cities.

Reviews by the entities listed above do not relieve the Design Engineer from full and sole responsibility for the accuracy and completeness of the design documents. Therefore, any errors or omissions in the calculations and their resulting consequences are at the sole liability of the Design Engineer.

4.5.2.2 Review Comments and Resolution

After the design package has been checked and audited, the Design Manager assembles and distributes the formal review submittal packages to all applicable reviewers. Five (5) working days are allowed for each review except the 100% review, which is allowed ten (10) working days. Reviewers provide their comments in writing on a Discipline Review Comments form (see Section 4.10). All reviewers use standard review comment forms. Each form clearly defines the package being reviewed and has a description of each comment with the agreed upon solution and the party responsible for implementing the change.

Comments are faxed to the Design Manager by the date and time indicated on the review package transmittal letter. If a reviewer has no comments, he indicates “No Comments” on the Discipline Review Comments form and faxes it to the Design Manager.

Design packages are reviewed for the items listed in Table 3, above. They are also reviewed for consistency between disciplines and constructibility.

After the review period, a comment resolution meeting is held. The Design Manager or the Senior Design Discipline Lead conducts the meeting. Participants include the design engineer, applicable design discipline leads, the WSDOT, the QO, the PM, and others as applicable (geotechnical engineer, environmental compliance manager, utility coordinator, right-of-way, representatives from cities and utilities). All review comments are reviewed and agreement is reached on the appropriate action to be taken. Should a comment require further investigation before final resolution, the designer prepares more information and then reconvenes with the Design Manager, the reviewer, the DQAM and the WSDOT to reach final agreement.

The design checker is responsible for checking and signing off that each comment resolution was incorporated into the plans or special provisions.

4.5.2.3 Review Documentation

For every comment resolution meeting, or Oversight Review, the Design Manager or his designee compiles, maintains, and distributes (within five working days) to the DQAM and WSDOT written documentation of the review meeting including:

- Discipline Review Comment Forms
- List of participants
- Items Discussed
- Identification of Discrepancies Noted and Corrective Action Planned
- Identification of follow-up action items, due dates, and the responsible party
- Identification of items needing resolution and time constraints for resolution.

4.5.3 Other Reviews

4.5.3.1 Oversight Reviews

At its discretion, the WSDOT or the QO may request and perform “over-the-shoulder” oversight reviews at times other than the scheduled milestone reviews listed in Section 4.5.1, above. The intent is to review the status of work in progress in a way that minimizes disruption of ongoing design work. The materials to be compiled for each review are jointly determined by the WSDOT, the QO, and the design staff and may include progress prints, computer images, draft documents, working calculations, draft specifications or reports, or other design documents. If necessary and mutually agreed by the designer and the WSDOT, the review consists of a transfer of electronic files to the WSDOT or the QO.

Any comments generated from oversight reviews are documented on Discipline Review Comments forms (see Section 4.10) and forwarded to the Design Manager, the DQAM, the Design-Builder, and other affected disciplines or entities for review. The Design Manager coordinates and documents the resolution of the comments and any concerns from other reviewers or entities.

4.5.3.2 Special Discipline Requirements

Utilities –Utility Owner Supplied Designs

The Utility Owner prepares a complete package of their design and construction plans, including applicable standards and special provisions, and submits it to the Design Manager for review distribution. The utility package is subject to a 100% Review in accordance with Section 4.5.1, above. Reviewers include the Department, the Design-Builder, senior discipline engineers, environmental compliance manager, city engineers, as applicable and utility owners. The Design Manager or his qualified designee verifies that each relocated utility, as designed, is compatible with and interfaces properly with the design and construction of the project. The Design-Builder provides constructability reviews to verify that the design and construction is consistent with the Utility Agreements.

Comments are made in writing on Discipline Review Comment forms and forwarded to the Design Manager by the date and time indicated on the package transmittal letter. The Design Manager returns all review comments to the Utility Owner to be addressed. Each comment must be addressed to the satisfaction of the comment originator.

Once all comments have been satisfactorily addressed, the package is audited by the DQAM to verify that the appropriate reviews have been completed and comments addressed. The package is then forwarded to the WSDOT for RFC review and approval in accordance with Section 4.5.1.

Utilities - Design-Builder Utility Designs

Utility designs prepared by the designer are checked, audited, reviewed, and approved in accordance with Sections 4.3, 4.4, and 4.5, above.

Unique Design Features

Should the designer or contractor require unique methods or products not previously used by the WSDOT, quality procedures will be prepared by the CQAM and approved by the WSDOT to ensure a quality product.

4.6 RFC Procedure

After the Designer of Record performs its "approved for construction" review and indicates, in writing, approval for releasing the package for construction, the Designer transmits the documents to the Design-builder. The DQAM stamps the documents "Released for Construction" (RFC) with the current date and revision number on each individual signed and sealed plan sheet and on all sheets of each signed and sealed special provision or specification.

The design drawings reflect the original design while the as-built drawings match the finished product.

4.7 Acceptance of Design

WSDOT acceptance of the design will occur after acceptance of construction. The QO audits (per Section 4.4) provide documentation for the WSDOT that all design packages released for construction are in compliance with the QMP. For QO certification of constructed work, refer to Section 2.10.13.

Acceptance of the final design will be done at Final Design Submittal when the entire package is submitted. The Project Manager formally submits the following items to the WSDOT to document final design:

- All as-built design plans and specifications
- Design Calculations
- Design Reports
- Estimated Quantities
- Electronic Files
- Manufacturer's Warranties

4.8 Design Changes

The design change process allows for design changes during design or after final design to maintain or improve quality, constructibility, or for modifying the design to account for unexpected or changed conditions in the field. The design change process provides thorough documentation and field as-builts of any changes made to the plans during construction.

4.8.1 Design Change Initiated by Designer: Notice of Design Change

As design progresses, the design engineer may determine that a previously released package or plan sheet requires a change to maintain the overall quality of the design. He/she requests a design change in writing to the Design Manager. The Design Manager reviews the request and may initiate the design change.

The design change is communicated to the Design-Builder, the QO, and the Department on a Notice of Design Change (NDC) form (see Section 4.10). The NDC includes a complete description of the change and the plan sheet numbers or special provisions the change relates to. The NDC also indicates the date when the updated plans or special provisions will be ready for release for construction. The Design-Builder will not construct any items affected by these changes until after the updated plans have been released.

The Design-Builder, the DQAM, and the Department review the NDC for conformance with the contract and advise the Design Manager of any comments within five (5) working days. The presence or absence of Department comments does not constitute Department acceptance - Department acceptance does not occur until the end of the project.

The Design Manager maintains a log of all NDCs.

All changes to drawings resulting from NDCs are checked, audited, reviewed, and released in accordance with the procedures detailed in Sections 4.3, 4.4, 4.5, and 4.6 for RFC procedures. The Design Manager or Construction Manager may request that the reviews be expedited if the construction schedule is affected by delaying the release of the changes. All reviewers will make every reasonable effort to accommodate the expedited schedule.

See Section 2.5.2 of this QMP for procedures for tracking changes on drawings and specifications.

4.8.2 Design Change Initiated in the Field: Field Design Change

4.8.2.1 Initiation

A Field Design Change (FDC) may be initiated in any of the following ways:

- Construction personnel may request an FDC to improve constructibility, to address differing field conditions, to increase cost-effectiveness, or to address errors or ambiguities in the plans. The Project Manager or his designee submits the request on an FDC form to the CQAM.
- The CQAM may initiate a Field Design Change due to constructibility issues or differing field conditions by completing a FDC form.
- The Department may request a field design change to address errors or ambiguities in the plans or specifications. The Department presents its request to the CQAM who initiates the design change through an FDC.

It is not acceptable to issue an FDC to address nonconforming work. Work that has not been constructed per plans, specifications, and contract requirements is deemed nonconforming and must be addressed using the process detailed in Section 5.9 (Nonconforming Work) of this QMP.

The FDC is initiated using the FDC form (see Section 4.10). The party requesting the change explains the issue and proposed change, lists any plan sheets or specifications affected by the

change, and includes any schedule requirements of the change. The completed FDC form is submitted to the CQAM.

4.8.2.2 Validity of FDC Request

The CQAM reviews all FDC requested by the Design-Builder for conformance with the quality plan and the contract requirements. The CQAM may deny the request at this point, in which case the FDC is returned to the Design-Builder unsigned.

If the CQAM agrees with the request, he/she determines whether or not the FDC requires design input and the procedures outlined in Section 4.8.2.3 or 4.8.2.4 are followed. The CQAM maintains a log of all FDCs.

4.8.2.3 FDC Procedure-Design Input Not Required (Changes to be shown on as-builts)

For FDCs where design input is not required (i.e. the proposed change does not materially affect the design intent) and the FDC is completely handled in the field, the CQAM signs and dates the FDC form and forwards it to the Department for approval. The Department either approves the FDC by signing and dating the FDC form or denies the FDC by returning it to the CQAM unsigned. The Department may also request additional information before making a determination if there is insufficient information accompanying the FDC. The Department responds to the FDC in some manner within two (2) working days.

The Design-Builder only incorporates changes into the final work after approval by the Department. The Design-Builder is responsible for reflecting any changes as a result of the FDC on the as-built plans.

4.8.2.4 FDC Procedure-Design Input Required

For FDCs where design input is required (i.e. the proposed change may materially affect the design intent or the designer is making changes to sealed documents), the CQAM logs the FDC and forwards it to the designer for action and also provides an information copy to the Department.

Revisions to Plans or Specifications that Do Not Require Re-release of Documents.

If the designer determines that the changes resulting from the FDC are minor or a written response will provide sufficient clarification of the issue the response may simply consist of a written response provided directly on the FDC form or as an attached memorandum. The response is checked in accordance with the procedures detailed in Section 4.3, above, and the responsible engineer and Design QC Reviewer sign and date the FDC form under Design Approval. The Design QA Manager forwards the FDC form and any attachments (not sealed at this point) to the Department for approval. If the Department does not agree with the FDC response, it returns the package to the designer with comments for further action, and the cycle is repeated. The Department reserves the right to request an audit of the package by the DQAM in accordance with Section 4.4. Depending on the complexity of the issue, the Department also

reserves the right to request additional design reviews. If the Department agrees with the FDC response, and requested audits and/or reviews have been performed, the Department's Oversight Engineer signs the FDC form and forwards it and any attachments to the Design-Builder. The Design-Builder reviews the response and if in agreement signs and dates the FDC *form and returns it to the Design Engineer to seal, sign, and date the FDC form and each attachment. The designer then distributes copies of the FDC and its attachments to the CQAM, the Department, and the Design-Builder. The Design-Builder then proceeds with implementation and is responsible for reflecting any changes as a result of the FDC on the as-built plans.*

Revisions to Plans or Specifications that Require Re-release of Documents.

If the designer determines that the appropriate FDC response requires revisions to plan sheets or specifications, the revised design documents are checked in accordance with Sections 4.3, above. In addition, whenever possible the original designer is notified of and agrees to the proposed design change, to confirm that the integrity of the original design is maintained. If the original designer is unavailable, the Design Manager assigns a senior experienced engineer who has not been involved in the origination/checking process of the proposed change to review the change and confirm the integrity of the original design is maintained.

The responsible engineer and QC Engineer (Checker) sign and date the FDC form under Design Approval. The designer forwards the FDC form, any attachments, and the proposed revised plans (not sealed at this point) to the WSDOT for approval. If the WSDOT does not agree with the FDC response, it returns the package to the designer with comments for further action, and the cycle is repeated. Depending on the complexity of the design, the WSDOT reserves the right to request an audit of the package by the DQAM in accordance with Section 4.4 and/or additional design reviews. When the package is fully acceptable to the WSDOT, the WSDOT's Engineer will sign the FDC form and forwards it to the DQAM. The DQAM will review the revised design documents and if in agreement, will sign and date the FDC form and return the package to the designer.

After all the appropriate signatures have been obtained on the FDC form, the designer seals, signs and dates the FDC form and each sheet of revised plans and specifications. The designer then will make final distribution of the entire package (FDC form and all revised plans and specifications) to the Department, the CQAM, and the Design-Builder.

4.9 Schedule Requirements

Appendix D1 details the proposed design and review schedule. The schedule shows the review period for each design activity. Revisions to the initial schedule are incorporated in the Monthly Plan Updates.

4.10 Forms

The following forms related to design quality are provided in Appendix D2:

Form DQA	Design Quality Audit Checklist
Form DRC	Discipline Review Comments
Form NDC	Notice of Design Change

Form FDC Field Design Change

5.0 Construction

This section defines the quality organization and systems designed to ensure that the specified materials are used and that the installation is acceptable to produce the required end product. The implementation of the Construction Quality Plan procedures is fundamental to the success of the Everett HOV Design-Build Project and will ensure that the WSDOT receives a product that complies with their requirements and addresses concerns regarding quality, durability, and life cycle maintenance costs.

5.1 Construction Quality Organization and Responsibility

The Quality Organization, as defined in Section 1 (Management) of this QMP, will provide the necessary supervision, quality control and quality assurance processes (inspection and testing) of all items of work, including that of all contractors, subcontractors and suppliers, that will insure compliance with the specified requirements.

The QO will conduct the Quality Assurance (QA) inspection and testing in accordance with the Contract, including the QMP. WSDOT personnel will perform Quality Verification Testing (QVT) to statistically compare and validate the results of the QO's tests. If the QO's QA tests are statistically validated by the WSDOT tests, then the QO's QA test results will become part of the WSDOT's basis for acceptance of the work. The WSDOT will perform split sampling and testing for Owner Independent Assurance (OIA). The WSDOT also will provide Quality Verification Inspection (QVI), oversight inspection of the QO's work. The Project Manager and QO will facilitate the WSDOT to fulfill its responsibilities of exercising due diligence in overseeing the construction.

5.2 Work Conditions

A safe and controlled work condition will be provided for workers on the project. The Design-Builder will provide the appropriate equipment and training for each worker to ensure safety on the job site.

Each worker will be trained according to the safety plan and in accordance with established laws and regulations. All workers including design, construction, QO and the WSDOT will attend required safety training as necessary to be allowed onto the work site. All people on the job site are required to wear appropriate safety gear as required by the projects safety plan.

5.3 Materials

The CQAM or designated representative will document and inspect all of the materials delivered to the job site, within 24 hours of delivery as described in Section 3.1 (Procedures to Ensure Consistency and Quality of Materials and Products Supplied by Vendors). The CQAM will keep

records of each delivery, material bill of lading, and certificate of compliance. The CQAM will develop a materials tracking system to track the materials quantities and acceptance status.

The CQAM or designated representative will clearly identify and mark the material by Schedule Activity ID. The identification will include any information clarifying where the material is to be used. All material, each piece of equipment, or element of work will be tagged or labeled to indicate the status of inspections and whether the material has been accepted or rejected. To preclude inadvertent bypassing or duplication of such inspections and tests, the items will be clearly identified when they have either satisfactorily passed required inspections and tests or if they have been rejected.

All materials will be stored per the manufacturer's recommendations and specifications. Once a month or as required by the manufacturer, the QO will inspect the storage sites and the stored materials for compliance with the manufacturer's recommendations and the project specifications. Additionally, the QO will inspect all materials for damage caused by improper storage or handling prior to incorporation into the project. If damage has occurred as a result of improper storage or handling, the material may be rejected. The QO inspector will document any issues with storage or handling of materials in his daily inspection report.

Section 1-06.4 and table 6 of the RFP provide for the statistical acceptance of some project materials. The acceptance by F and t Analysis is per section 2.25.2.2 and 2.26.4.8 of the RFP. The analysis will be done using the WSDOT provided SAM software. The construction manager can request the acceptance of small quantities without normal sampling and testing frequencies. The CQAM will accept or reject this proposal based on the information included in the request and section 2.25.4 of the RFP. The CQAM will convene the Materials Quality Assurance Team every two weeks to discuss any issue pertaining to materials for the project.

Any rejected materials will be removed from the project within 24 hours of rejection or the CQAM will write an NCR.

5.4 Inspection

5.4.1 Work

The Construction Manager and the QO meet weekly for quality meetings and on a daily basis as needed to review and update the inspection schedule. The CQAM will provide inspectors for each work activity requiring an inspector. The CQAM also will provide appropriate personnel for Quality Assurance sampling and testing efforts for all construction activities.

The CQAM will schedule the inspection of utility relocations with the utility owner prior to construction. These inspections will be documented and placed in the quality record for that particular utility relocation. The CQAM also will schedule Quality Checkpoint inspections with the CM and the WSDOT.

The purpose of the daily inspections is to document that construction practice, finished work and sampling and testing meet the requirements of the QMP and project documents.

Prior to beginning a work activity that requires inspection and testing staff, all inspectors and sampling and testing personnel are at the site of the activity. The CQAM or designated representative will inspect the site prior to activity start to determine readiness of the work area. The CQAM will check the quality records to determine if a quality checkpoint conformance has been obtained, if necessary. Once these items are completed the work may begin.

Quality Assurance sampling and testing will be performed randomly by the QO in accordance with the testing plan for each material provided to the WSDOT. The plan will be developed using a random Numbers Table and will reflect the total plan quantity. The plan will be submitted to the WSDOT prior to placement of material on the project.

The QO maintains a daily inspection report containing each work activity that has been inspected. The daily inspection report is part of the activity file.

The Process Quality Control staff will assist in developing appropriate work procedures to meet the requirements for the project. The Process Quality Control staff will make preliminary on site tests, and will modify the processes as necessary to meet contract, plan and specification requirements for the project. Quality control testing will be performed at the time and location as determined by the Construction Manager.

The CQAM notifies the outside entities two weeks in advance when inspections of their facilities are necessary. The CQAM calls the outside entity 24 hours prior to the construction activity to allow the entity to provide appropriate personnel for the inspection. The CQAM coordinates any sampling and testing necessary for the entity and provides sampling and testing personnel, as necessary.

The CQAM will provide QA inspection and approval of project specific fabricated items. The CQAM will promptly notify WSDOT of the intended fabricator, fabrication inspector, and provide an Approved copy of the shop drawings. The fabrication inspector will provide a Certificate of Compliance as appropriate for the material being inspected, and stamp or tag each approved item, in accordance with section 9-1.5D of the Construction Manual.

Limited Acceptance Inspections by the WSDOT

The WSDOT will conduct acceptance inspections of the following items. The Designer will conduct quality control for the off-site fabrication of these items in accordance with Quality Management Plans that are approved by the WSDOT.

1. Highway Traffic Signs
2. Traffic Signal Controllers
3. ITS Systems

The CQAM will coordinate the WSDOT QA fabrication inspections or testing of the above items as required by section 2.25.7 of the RFP.

5.4.2 Production Plants

The asphalt concrete plant used for the production of asphalt concrete will meet the requirements of the Standard Specifications. The QO will inspect the asphalt concrete plant and document that it meets requirements. The concrete batch plant for the production of Portland Cement Concrete will be a National Ready Mix Concrete Association (NRMCA) approved plant.

For production of hot-mix asphalt, PCCP and structural concrete, the CQAM will review the testing data for conformance with the plans and specifications. The CQAM will the asphalt concrete suppliers mix design for meeting contract requirements. The CQAM will send the WSDOT a copy of the completed Hot Mix Asphalt (HMA) mix design showing all trial blends and calculations, along with a sufficient amount of prepared aggregate for the WSDOT to verify the adequacy of the proposed design.

Any nonconforming test results will be brought to the supplier and adjustments to the processes will be developed and implemented by the supplier prior to the next batch. The WSDOT will independently verify the plant product. These tests will be analyzed statistically to ensure conformance of the material.

5.5 Field Procedures

The contractors will use appropriate field procedures to provide a product that meets the requirements of the Contract, the plans, and the specifications.

The Designers or contractors will plan the work effort and prepare all working drawings needed to accomplish the work prior to beginning construction. The Construction Manager shall understand the field procedures, the plans, and the specifications. The Construction Manager will discuss Quality Assurance requirements with the CQAM or a designated representative prior to beginning work. The Construction Manager will describe the work requirements and Quality Assurance requirements to all the workers involved in the Work.

The Construction Manager will begin construction of the Work and the Process Quality Control staff will perform any tests necessary to develop processes that provide conformance to the contract, plans, and specifications. The contractor will modify his processes, as deemed necessary, by the Construction Manager and Process Quality Control staff to keep the work in conformance with the contract, plans and specifications.

The Construction Manager will provide training to all personnel in the appropriate process to be used for each work element under construction. If the processes are changed, the Construction Manager is responsible for training the workers in the new processes.

Any special procedures required for unique product or design conditions are outlined in special provisions developed by the designer. These procedures can not be modified without written change authorization from the designer.

5.6 Dispute Resolution

In the event of a dispute arising in the QO sampling and testing process, the following dispute resolution system is recommended.

The PM, QO staff, and the WSDOT review technical procedures, test methods, sampling procedures, equipment certifications, and lab procedures to look for procedural or technical causes for test discrepancies. Corrective action is taken immediately if the cause of the discrepancy is located during this review. If the cause is not located and corrected, the issue is escalated as follows.

A statistical analysis will be performed using the approved WSDOT procedure. If agreement is not reached, resolution will be by following the procedures required by sections 2.26.1.1, 2.26.4.2 and 2.26.4.8 of the RFP.

5.7 Shop and Falsework Drawings

The Designer will obtain appropriate shop, falsework, shoring, and erection drawings from fabricators, vendors, subcontractors to the Designer, or his own personnel. The drawings are developed under the supervision of, and sealed by, a professional engineer registered in the State of Washington. The Designer reviews the drawings where applicable for constructibility and then forwards the drawings to the DQAM, as a submittal. The DQAM is responsible for developing the submittal log for the project. The log has the following columns of information in the specified order:

- Submittal Identification Number
- Schedule Activity Number
- Submitted by Fabricator/ Vendor/ Designer
- Receipt Date of Submittal Document
- Date Sent to Reviewer/ Designer
- Date Received Back from Reviewer/ Designer
- Status/ Action or Decision of Review
- Date Returned to Designer

Each time a submittal is received, the DQAM logs in the submittal. The DQAM forwards the drawing to the Design Manager with all of the above submittal information attached to the shop drawings.

The reviewer, chosen from the design staff, places a shop drawing review stamp on the drawings. He/she completes a technical review of the drawings to determine their compatibility with the plans and specifications. The reviewer returns the drawings with his comments to the Design Manager and the Design Manager returns them to the DQAM for review. The DQAM then approves the submittal or returns it to the Design-Builder for revision.

The DQAM logs in the appropriate dates and status of the drawings and then returns the drawings to the Design-Builder for appropriate action. The Design-Builder supplies the Department with a copy of the approved drawings at least one Working Day prior to start of any

on-site work detailed in the drawings. For off-site fabrication, the approvals and drawings are forwarded to WSDOT at least seven (7) Working Days in advance of the beginning of fabrication. No changes are made to any approved shop or working drawings without resubmitting the drawings and beginning the review process again.

Shop drawings are reviewed and approved by the Designer. Falsework, erection, and shoring drawings are stamped & signed by a Professional Engineer licensed in the State of Washington and reviewed by the Designer. Falsework drawings and shop drawings require the same QC and QA as all project design.

To be approved, a shop drawing is:

- Submitted to the Design Engineer of Record for review and approval (signature)
- Signed by the Design Reviewer; and
- Stamped “Approved for Construction”;
- Reviewed by the DQAM.

For additional requirements for shop and working drawings, refer to Section 5.11 (Supplemental Drawings) of the QMP.

5.8 Testing

5.8.1 Test Procedures

The QO completes field sampling per the requirements in section 1-06, 2.25 and 2.26 of the RFP. These requirements cannot be changed without written authorization of the CQAM and approval of the WSDOT.

The CQAM schedules QA sampling and testing staff to support the normal progression of the work.

The QO performs QA testing for all work elements requiring acceptance tests. Tests are conducted in accordance with the RFP *requirements*. The CQAM performs F and t statistical analysis of the QO acceptance tests and tests performed by WSDOT personnel. The F and t statistical analyses are in accordance with the requirements of section 2.25 of the RFP. If the QO tests are statistically validated by the WSDOT tests, then they form the basis of acceptance.

Initial QO material tests and the WSDOT personnel tests will be performed at the same frequency to establish a confidence level in the results of the QO tests and the WSDOT personnel tests. The QO will exercise sound judgment in its testing approach and will increase the frequency of testing in situations in which quantities may be small but location is critical, such as sliver fills.

The QO documents tests on forms developed by the Design-Builder and approved by the WSDOT. Test results will be prepared by the Design-Builder and documented in the WSDOT-provided Statistical Analysis of Materials Software. The QO will audit all test procedures to ensure that they meet the AASHTO, ASTM, or the WSDOT requirements.

5.8.2 Equipment Certifications

The CQAM will check all measuring and testing devices to evaluate the working order, condition, calibration and certification of the equipment. The calibration verification of all testing equipment will meet the requirements of AASHTO R18. The CQAM or his designee will maintain calibration records of required activities. The required procedures, personnel certifications, and calibration program are set up in compliance with the contract documents. The QO laboratory is required to provide and maintain the following:

- Name and qualification of the Manager in charge of the laboratory
- A list of testing equipment proposed for each test procedure, including the latest calibration data.
- A copy of the latest laboratory equipment inspection report by WSDOT along with documentation that deficiencies, if any, have been corrected.
- Names and qualifications of persons actually performing testing and sampling. The CQAM verifies that all inspecting and testing personnel have the appropriate certifications prior to performance of work.

Quality Control procedures ensure that tools, gauges, instruments, and other measuring devices are properly maintained, controlled, calibrated, and adjusted. The Laboratory Manager is responsible for the continual calibration and maintenance of the measuring and testing equipment. A qualified testing firm calibrates the testing equipment in accordance with AASHTO R-18. Label each piece of equipment with the necessary seals or tags that specify the date and by whom it was calibrated. Documents verifying the calibration of test and measuring equipment is retained in the materials testing laboratory.

5.8.3 Instrumentation

All instrumentation is installed, maintained, and monitored in accordance with manufacturer specifications. The appropriate personnel are assigned to install, maintain, and monitor all instrumentation.

5.8.4 Coordination

The CQAM coordinates inspections and testing by local agencies and Utility Owners. The inspections and testing are documented and placed in the quality record for that particular utility or local agency.

5.8.5 Qualifications of Laboratories

All QA testing will be performed by a WSDOT approved laboratory reporting directly to the Construction Quality Assurance Manager (CQAM). The laboratory will meet the requirements of AASHTO R-18 for qualified testers and calibrated/verified equipment and be able to accomplish the testing according to the test procedure they are performing. The CQAM will inspect the laboratories and check their certification a minimum of once every six months. The laboratories will provide all equipment certifications and calibration dates to the CQAM for the quality records for the project.

All equipment used, whether at an established laboratory or satellite (field) laboratory has to be calibrated/verified. The laboratories have uniform policies and procedures per AASHTO R18 to ensure that they are providing testing services in compliance with applicable test methods. The policies and procedures address inspection and calibration of testing equipment, as well as a correlation-testing program between the laboratory and portable or satellite facilities.

If a laboratory is disapproved, it shall not perform QA tests.

5.9 Nonconforming Work

During construction and placement of materials, QO field personnel reject workmanship or materials that are not in accordance with the specifications. The Nonconformance process below is followed for completed work or materials that do not meet the specifications.

5.9.1 Nonconformance Report Identification

The Designers, Contractors and QO staffs are responsible for identifying nonconforming work. The WSDOT may also identify potential nonconforming work to the CQAM for action. Any work not meeting the plans, specifications and contract requirements is deemed nonconforming. Any of the QO may prepare a nonconforming work report for review by the CQAM. This report must detail the area of the problem, and cite from the plans, specifications or contract, how or why the work does not conform. The NCR must be submitted to the CQAM in writing within 24 hours of identification, and a copy sent to the design engineer and Project Manager.

5.9.2 Nonconformance Remediation

The Nonconformance Report (NCR) has several avenues for remediation depending on the severity of the problem. Among them are:

1. Remedy the situation—The Design-Builder corrects deficient work.
2. Design Related NCR Issue—The DQAM or CQAM will issue the NCR and request design review of the nonconformance. The QO is responsible for providing detailed information for the designer to review. The design engineer who signed and stamped the drawing for the work will evaluate and determine whether a nonconformance exists, and the effect of the nonconformance on performance, safety, durability, long-term maintenance, and the life of the item. Remedial actions will be documented and stamped by a Professional Engineer licensed in Washington. The DQAM must also sign the NCR, stating that remedial actions to be employed have undergone the same level of checking, inspection and testing as required for the original design.
3. Price Reduction—for the work element outlined in the contract specifications, CQAM will perform the calculations in accordance with the contract, obtain written approval from the Designer of record of structural adequacy and forward this information to the WSDOT and the Project Manager for administrative closure of the NCR.
4. Remove and Replace—the CQAM may require the CM to remove and replace nonconforming work.

5.9.3 Removal of Work

If the WSDOT does not agree with the remedial actions set forth in an NCR, it has the authority to call for removal of the nonconforming work.

5.9.4 Weekly NCR Reports

The QO maintains a log of all NCRs and submits it weekly to the WSDOT. The QO numbers each NCR sequentially; gives a brief description and status of the nonconforming work, and, if the NCR has not been closed, an expected closure date. The WSDOT does not grant acceptance for any portion of work that has an outstanding NCR.

5.9.5 Department NCR

The WSDOT reserves the right to issue NCRs based on its observance of work. WSDOT generated NCRs require the same review and ultimate closure as NCRs generated by the QO.

5.10 Supplemental Drawings

5.10.1 Shop and Working Drawings

The designer submits signed and stamped released for construction drawings to the CM. The CM generates supplemental drawings (shop and working drawings) as necessary to define, control, construct, and inspect the work. Working drawings consist of detailed layout of various work efforts to assist a contractor in building the work. These supplemental drawings do not require a professional engineer stamp.

Shop Drawings are prepared by the Designer or subcontractors to the Designer for all structural steel fabrication, anchor bolt layouts, shop details, erection plans, or any other items required by the plans, specifications or contract. The drawings must bear the stamp and signature of the Design Engineer in Responsible Charge.

Shop Drawings are logged and reviewed according to the procedures discussed in Section 5.7 (Shop and Falsework Drawings) of this QMP. The WSDOT may request to review working or shop drawings at any time.

If necessary, a comment resolution meeting is held with the WSDOT, the designer, the Project Manager and the DQAM to resolve any conflicting comments. This meeting is held at the end of the comment period and comment resolution recorded for quality record.

The Designer then modifies the plans in accordance with all comments and resubmits to the DQAM for the final approval.

5.10.2 Reviews by Local Agencies and Utilities

As part of the shop and working drawing review process, the DQAM sends appropriate local agencies or utilities copies of shop and working drawings for their review as specified in the plans, specifications or contract. These drawings are reviewed and approved by the agencies in the same manner as the designer shop drawing review process. The DQAM log in the drawings date sent out, date received back and includes any comments sent by the local agency or utility that must be addressed by the Design-Builder prior to final approval of the drawings. The agency

and utility are given appropriate time to review and respond to the drawings as defined in the specifications.

If necessary, a comment resolution meeting is held with the designer, Project Manager, utility or local agency and the DQAM to resolve any conflicting comments. This meeting is held at the end of the comment period and comment resolution recorded for the quality record.

The Designer then modifies the plans in accordance with all comments and resubmits to the DQAM for final approval. No fabrication or construction occurs without approved shop drawings.

5.10.3 Public Safety

The DQAM sends those shop or working drawings that may adversely affect the public health or safety to the WSDOT and the local agency for review and approval at the same time the designer is reviewing the drawings. The Designer may prepare drawings for work such as shoring, crib walls, cofferdams, falsework, overhead signs, temporary support systems, formwork and other temporary work that may affect public safety. The QO reviews the drawings as discussed in the shop drawing review process described in Section 5.10.1 (Shop and Working Drawings) of this QMP.

5.10.4 Bridge Superstructure Shop Drawings

Fabrication of any bridge superstructure elements does not begin until shop drawings for the element have been reviewed and approved by the QO as described in Section 5.10.1 (Shop and Working Drawings) of this QMP.

5.10.5 Design-Builder Responsibility

The Design-Builder accepts all liability for temporary items used in the Work. The receipt of submittals for temporary work in no way constitutes approval of the planned Work or acceptance of any liability by the WSDOT. The Design-Builder accepts sole risk for any procurement or fabrication of materials without QO-approved shop drawings.

5.11 Quality Checkpoints

Quality Checkpoints (QCPs) will be established at various stages of construction for the project and will provide an opportunity to evaluate the work for acceptability prior to beginning the next portion of the work. Representatives from the WSDOT, the Project Manager, designer (when required) and QO will review the progress to date, including the inspection reports, process and QA test reports, settlement data, pile driving records, string-line measurements, audits and other pertinent data. The CQAM meets with the WSDOT on a daily basis to schedule quality checkpoints for the following day. No additional work takes place until all parties mutually agree that the work done up to the QCP is acceptable.

QCPs will be incorporated into the schedule and will occur at the following stages of construction:

Embankment Checkpoints:

1. After completion of drainage and utility installations and before backfill.
2. In accordance with contract requirements and at intervals of embankment construction of every 5 vertical feet (applicable to all embankments, including retaining walls).
3. At completion of embankment placement to establish the settlement monitoring baseline.

Structures:

1. At completion of bridge embankment settlement and before the start of bridge foundation pile driving.
2. Before beginning pile driving, pile-driving submittals (including design calculations and WEAP analysis).
3. After completion of pile-driving at each structure support (pile group) (including pile-driving results and records).
4. Before concrete placement of any substructure element including pile infilling.
5. After girder and diaphragm placement.
6. Before concrete placement of deck, approach slabs, diaphragms, and parapets, but with forms, reinforcement and inserts in place.
7. Before beginning construction of box culverts (to confirm sub-grade materials).
8. Before concrete placement for cast-in-place box culverts - with forms, reinforcement, and inserts in place.

Surfacing and Paving:

1. Before placement of each course above sub-grade on permanent roadway components (CSBC, CSTC, etc.).
2. Before placement of each roadway surfacing lift (including base courses, asphalt concrete paving, and Portland cement concrete [PCC] paving) on permanent roadway components.

Retaining Walls

1. Before the placement of the leveling pad of a mechanically stabilized earth (MSE) wall or the foundation of any other type of retaining wall (to confirm sub-grade materials and conditions).
2. For single-stage MSE Walls with height of 25 feet or more, panel tolerances when the wall is three panels tall.
3. Panel tolerances after completion of placement of panels for each MSE wall, prior to beginning coping placement.
4. Before concrete placement for cast-in-place retaining walls - with forms, reinforcement, and inserts in place.

Noise walls:

After completion of every 500 feet of noise wall, before proceeding with construction of more noise walls.

Drainage

After placement of pipe or box, before placement of backfill.

Environmental

Before any construction occurs, other than to install BMP's and environmental controls, verify that all BMP's and environmental controls, as designed by the Design-Builder's Environmental Control Supervisor, are installed according to design and RFP requirements.

5.12 Audits

Periodic audits of construction and testing, offsite plants, and testing labs are scheduled and performed in accordance with Section 2.4 (Audits) and as outlined within Section 5 (Construction) of the QMP.

6.0 Environmental Compliance and Monitoring

6.1 Final Environmental Assessment Commitments

The Environmental Compliance Manager (ECM) will provide a list of environmental commitments for the project. This list will be verified by both the DQAM and the CQAM prior to submittal to WSDOT for approval.

6.2 Organization and Reporting

The ECM will periodically audit the environmental monitoring established for the project. The DQAM will assist the EQM by verifying that design plans and specifications have been reviewed for environmental compliance. Technicians will monitor, on a daily basis, air quality readings and all the components of the environmental plans and strategies. Biologists will monitor wetlands or other sensitive areas. The ECM is responsible for audits and weekly inspections of the project environmental facilities for compliance with the specifications, plans, and permits. The documents will be sent to WSDOT for review.

A copy of Daily Environmental Inspection Reports and Instrument Readings will be given to the ECM on a weekly basis for documentation in the quality record. The ECM will prepare a weekly Environmental Compliance Report that includes results of inspections and audits as well as design compliance reports for the project. We will forward this documentation to WSDOT and the Project Manager for review. Any nonconformance issues will follow the NCR Remediation process discussed in Section 5.6 of this QMP.

For permanent environmental facilities, design environmental compliance is an integral part of the quality control process. Our designers are responsible for developing plans that meet the environmental requirements for the project. The designer will forward an Environmental Compliance Form with associated plans for review and approval by the DQAM, and the WSDOT. All final plans are audited by the DQAM for an approved Environmental Compliance Form.

6.3 Permit Requirements

The Environmental Compliance Manager will provide a list of all permits to the DQAM and the CQAM. The ECM will audit the work for compliance with the environmental permits.

6.4 Monitoring Schedule

The Environmental Compliance Manager (ECM) or designated representative will perform daily inspections of Temporary Erosion and Sediment Control installations and other permitted facilities. Any areas requiring maintenance will be reported to the Project Manager. The Project Manager will direct construction staff to perform maintenance to bring the facility into compliance. The ECM receives a copy of the daily inspection reports. The ECM or designated representative will review the daily inspection reports on a weekly basis and will inspect the facilities to evaluate that the facilities have been placed according to permit requirements, are in working order and meet the intent of the permit. Any nonconformance is forwarded to both the WSDOT and the Project Manager within 24 hours of the inspection.

Work completed as part of the project environmental compliance will be reviewed by the ECM for conformance with the plans and permits. Any nonconforming work will be corrected per Section 5.9.2 (Nonconformance Remediation) of this QMP.

6.5 Documentation

The monitoring inspection reports for Temporary Erosion and Sediment Control, air quality instruments as well as other permitted facilities are in the Quality Management Section under the appropriate permit. The design and construction quality documents for various aspects of the work will be included under the appropriate schedule activity number. The CQAM will file all permits for the work under permits. A copy of the approved Environmental Compliance Form and Acceptance of the final construction will also be included in the permit documentation.

7.0 Maintenance of Public Facilities

7.1 Monitoring Procedures Before, During, and After Construction

A Traffic Control Supervisor (TCS) and a Public Involvement Specialist will monitor safety issues, noise and dust complaints, and review access to businesses. The Traffic Control Supervisor will review the signs, striping, barrels, etc. for conformance with the plans and specifications. The Traffic Control Supervisor will review the traffic control set-up after every change and at the beginning of every shift to ensure compliance with the plans and specifications. The Public Involvement Specialist will be available to respond to and handle public complaints or maintenance issues along the business access areas, sidewalks and other public facilities. The Traffic Control Supervisor and the Public Involvement Specialist will report any problems to the Construction Manager and the issues will be remedied.

The CQAM will review the traffic control, debris, noise and dust issues, access to business and safety of detours on a daily basis. Any areas that are deemed to require maintenance or safety improvements are documented and reported to the Construction Manager (CM). The CM will immediately remedy the situation.

7.2 Documentation

The Traffic Control Supervisor will provide a daily inspection report for the traffic control and will submit a copy to the CQAM. The Public Involvement Specialist will document all complaints and monitor that they are resolved in a timely manner. A copy of all communication with the public and resolution of issues with the public will be forwarded to the CQAM and the WSDOT for inclusion in their records. The CQAM will include traffic control and other safety or public facilities issues in the daily diary.

8.0 Surveying

All survey work will be performed in accordance with the Department-approved Survey Plan, the plans and specifications, and standard engineering and surveying practices under the responsible charge of a professional engineer or professional land surveyor registered in the state of Washington.

8.1 Construction Staking Quality Control

8.1.1 Development of Field Books and Supplemental Field Staking Data

Three levels of quality control checking will be performed on the data used for construction staking. The process is outlined below.

The Construction Surveyor will use released design drawing information to establish field staking information such as coordinate data, station offset data, and property corner and right of way calculations by recreating the plan set in the software format required by section 2.1.7 of the RFP. The Construction Surveyor uses the recreated information to check the accuracy of the plan, set coordinates, elevations, offset, bearings, angles and slopes to the given typical sections, profile alignments and super elevations tables. A visual check of the information entered into the required software format in conjunction with spot check comparisons between the generated information and the released plans provides the **first level** of quality control checking. If any discrepancies are found at this point, the Construction Surveyor will not proceed until the discrepancies are resolved and/or corrected.

The Construction Surveyor will use the confirmed information recreated in the software required by section 2.1.7 of the RFP to establish the geometrics for staking. This staking information, in the form of Stations and Offsets is used to develop field books. A separate field book is developed for each staking activity (i.e. utilities, slope stakes, bridges). The **second level** of quality control checking occurs by performing spot checks on the survey field staking information entered into the field book. An individual who has not been involved in the particular aspect of the field book data being checked, will spot-check the information for accuracy. The checker documents his check by placing a red check mark in the field book adjacent to the item checked. If errors are found, they will be corrected prior to inserting the red check mark.

The **third level** of quality control on the construction staking data will be performed in the field by the survey Party Chief. The Party Chief once again will make random spot checks of the field notes.

For some locations, supplemental staking plots will be developed in addition to the field books to provide additional information to the survey crew. These supplemental drawings offer an

additional level of quality control in more complex areas by providing a visual reference of staking points.

8.1.2 Field Survey

The Construction Surveyor will use conventional surveying for construction field staking. This method will utilize a total station method measuring angles and distances and derives the horizontal element and levels are used to acquire the vertical element. Refer to the approved Survey Plan (under separate cover) for specifics of the Construction Surveyor's method for staking construction points.

8.2 Construction Staking Quality Control

8.2.1 QO Verification of Field Book

In order to assure that the Construction Surveyor has performed spot checks in accordance with Section 8.1.1 above, the QO Surveyor periodically audits the field books.

8.2.2 QO Verification of Field Survey

The QO Surveyor will provide a series of Quality Assurance checks on actual staked points in order to verify that the established points for Project Controls, construction surveying, property surveying, ROW markers, and re-established State and City Monuments are good. The estimated frequency of QO field survey verification is provided in the following table.

TABLE 4: FREQUENCY OF QO FIELD SURVEY VERIFICATION

Surveying Items	Estimated Total Project Points	Proposed Dedicated QA Check Points	Estimated Frequency	Comments
Slope Stakes	TBD	TBD	1 / 1000 ft stationing	Random Selection Both Sides, I-5 mainline, ramps, and frontage roads
Culverts	TBD	TBD	4 per Culvert	Check Grade, Location at 5 of 11.
Pipe	TBD	TBD	1 per 400 ft	Hubs for Cut Sheet
SD Boxes	TBD	TBD	2 per Box	Box Location and RP at 30 Total Boxes.
Curb and Gutter	TBD	TBD	1 per 400 ft Stationing	Check Grade and Location
Sidewalk	TBD		1 per 500 ft Stationing	Check Grade and Location
Signals	TBD	TBD	1 per Pole Location, 2 per Signal for Loops	Check Location and Grade
Major Sign Locations	TBD	TBD	1 per 6	Check Location
Retaining Walls	TBD	TBD	1 per 200 feet of wall per wall	Random Selection, Check Grade and Location
Barrier	TBD	TBD	1 per 600 ft	Random Selection, Check Grade and Location.
Right of Way / Property Lines	TBD	TBD	1 ROW marker per 1000 ft 1 Point per 5 Properties	Random Selection, Check location.
Control Points	TBD	TBD	15 Control Points	Check Location, Elevation.
Pile Locations	TBD	TBD	1 out of every 5 piles	Check Location
Abutment Walls/Bearing Pads	TBD	TBD	24 Points for Abutment Walls	Check Location, Grade
Check PCC Wire Lines on I-5 mainline and Ramps	TBD	TBD	1per 400 ft and Gore Areas	Check for Grade and Location
Total Points		1077		

The QO Surveyor will use a survey method that provides an independent Quality Assurance check on the construction surveying.

8.2.3 Tolerances for QO Field Survey Verification

By using a survey method that provides an independent survey check on the Construction Surveyor, the QO Surveyor performs a truly independent check of the construction staking. However, due to the inconsistencies of the methods described and operator differences, exact duplications of surveyed points would be rare. Since the difference in the QO field verifications may be greater than the allowable tolerances, the QO Surveyor will identify the field verified point to either conform to the design intent and/or conform to the project specification tolerances. The QO Surveyor will use the tolerances within Table 5 to establish whether the field verified point conforms to the design intent.

TABLE 5: TOLERANCES FOR QO FIELD SURVEY VERIFICATION WITH DESIGN INTENT		
Surveying Items	Horizontal Decimals of a Foot	Vertical Decimals of a Foot
Slope Stakes, roadway finish grade stakes		
Slope Stakes, sub-grade finish stakes		
Culverts		
Pipe		
SD Boxes		
Curb and Gutter		
Sidewalk		
Signals		
Major Sign Locations		
Retaining Walls		
Barrier		
Right of Way / Property Lines		
Control Points		
Pile Locations		
Abutment Walls/Bearing Pads		
Check PCC Wire Lines on I-5 mainline & Ramps		

8.2.4 Documentation of QO Survey Verification

The QO will document verification of field survey points using FORM FVR (Field Verification Report). This report will provide a description of the item checked, findings, comments, conformance with specifications and/or design intent, any action taken due to discrepancies, and the resolution of any discrepancies. Any supporting documentation generated for verification of points checked will be attached to the form. The form will be signed and dated at each step of the verification process. A certification signature will be placed at the bottom of the form once all discrepancies have been resolved.

All Field Verification Reports, in accordance with the frequency established in Section 8.2.2, associated with a particular activity, are required at the corresponding established Quality Check Points.

8.3 Coordination between Construction Surveyor and QO Surveyor

In order to ensure the effectiveness and timeliness of the survey verification process, the Construction Surveyor is responsible for keeping the QO Surveyor up to date on all construction staking activities. Notification will be provided to the QO Surveyor via frequent phone conversations and faxes. This coordination effort is essential for minimizing delays in construction activities.

8.4 Resolving Discrepancies

If errors are identified during the QO field verification, the QO notifies the Construction Surveyor and the CQAM. The QO Surveyor and Construction Surveyor try to resolve the discrepancy. The Construction Surveyor has the opportunity to accept and correct the error or reject the discrepancy. If the discrepancy is not resolved, a meeting is scheduled between the Construction Surveyor, the CQAM, and the QO Surveyor to resolve the discrepancy. If the discrepancy is not resolved at this level, the issue is escalated to the PM and WSDOT for resolution.

8.5 As-Built Documentation

Field records will be maintained for all plan changes and will be submitted to the Design-Builder for inclusion in the electronic files. As-built drawing processes and procedures will be in accordance with Section 2.6 (As-Built Drawings) of this QMP.

9.0 Utilities

This section defines the quality control and Quality Assurance processes for the following elements associated with utility work required for this project.

The DM may prepare plans for utility work and is responsible for the checking of those plans. The DQAM audits all utility relocation, modification or installation plans to ensure conformance to the quality process. The CM is responsible for the quality control for the utility work including checking the work and testing the materials. The CQAM provides the quality assurance inspection, sampling and testing of materials used for the utility work and audits processes for compliance.

(To be developed jointly by the Department and the Design-Builder after the award of the Contract)

APPENDIX D1

Schedule of Reviews and Checkpoints

APPENDIX D2

Forms

Discipline Review Comments	Form DRC
Right-of-Way Document Review	Form ROWDR
Notice of Design Change	Form NDC
Design Quality Audit Checklist	Form DQA
Design Quality Certification	Form DQC
Certification for Design Documents prepared by others	Form CDDO
Materials Receiving Report	Form MRR
Nonconformance Report	Form NCR
Pile Driving Record	Form PDR
Field Verification Report	Form FVR
Field Design Change	Form FDC

Discipline Review Comments - Form DRC

[illegible]

ACTION CODES:

A= DESIGNER WILL COMPLY;
B= CONSULTANT WILL EVALUATE
C= DELETE COMMENT

FINAL DISPOSITION CODES:

A=DESIGNER WILL COMPLY
C=DELETE COMMENT

D= CONTRACTOR TO EVALUATE

* FOR ITEMS WITH ACTION CODES B OR D, A SUMMARY IS ATTACHED TO PROVIDE FURTHER EXPLANATION AS TO WHY THE FINAL DISPOSITION WOULD CHANGE TO CODES A OR C OR ANY OTHER NECESSARY CLARIFICATION.

Right of Way Document Review Form ROWDR

Package Description:				Package Prepared By:		
Reviewer Position/Name	INTERNAL REVIEWS					
	Preliminary Right-of-Way Information			Right-of-Way Partial Submittal		
	Signature	Date	Comments	Right-of-Way Partial Submittal	Date	Comments
Right-of-Way Coordinator/						
Design Engineer/						

NOTICE OF DESIGN CHANGE - Form NDC

To: Design-Build Team
Project Manager

From: Quality Organization

DESIGN MANAGER: _____

DESIGN CHANGE NO.: _____

DATE: _____

Note: This form serves as advanced notice
and is not intended to be a letter of transmittal.

REASON FOR CHANGE

Remarks: _____

<input type="checkbox"/>	Error in plans	_____
<input type="checkbox"/>	Design progress	_____
<input type="checkbox"/>	Conflicting design elements	_____
<input type="checkbox"/>	Other:	_____

DESCRIPTION OF CHANGE/REVISION:

DWGS./SPECS. TO BE REVISED

Design Manager (Sign & Print Name)

Date

REVISED DWGS./SPECS WILL BE AVAILABLE ON _____

NDC REVIEW/APPROVAL**☐ WSDOT APPROVAL**

Everett HOV Project Director (Sign & Print Name)

Date

☐ DESIGN-BUILDER APPROVAL

Design-Builder (Sign & Print Name)

Date

COPY DISTRIBUTION

CQAM
DQAM

WSDOT

DESIGN QUALITY AUDIT CHECKLIST - Form DQA

AUDITED AREA: DISCIPLINE:		AUDIT DATE(S):		
AUDIT ITEM:		CONFORMS		
AUDITOR:	CONTACT:	YES	NO	N/A
1. Calculations: A. Are calculation check prints available?				
B. Is computer program input being checked?				
C. Have computer programs been verified?				
D. Did the reviewers sign-off and date the review print stamp?				
2. Are drawing check prints available?				
3. Are check prints of specifications available?				
4. Other design documents				
5. Reviews: A. Were scheduled design reviews completed?				
B. Do comments have an agreed upon action code?				
C. Are the review comments incorporated?				
D. Has an IQF review been performed to confirm design is in accordance with the Contract Requirements?				
E. Did reviews confirm that no design exceptions exist that have not been previously approved by the Department?				
F. For FDC's and NDC's have reviews confirmed the design is consistent with other elements of original design?				
6. General A. Are procedures for marking-up check prints being followed? Yellow/red - checker Green - originator Yellow - verifier				
B. Are check prints properly signed and dated?				
C. Have audited items been checked in accordance with the approved QMP?				
7. The QO signature below certifies the requirements of Section 4.4 (Audits) of the QMP have been fulfilled. Date		RETURNED FOR CORRECTION		

Form CDDO

DATE: _/_/_

SUBJECT: Everett HOV Design-Build Project

Certification for Design Documents prepared by Others

To Whom It May Concern:

The following documents, reports, specifications, and/or construction plans have been designed by Utilities (or their agents) in which they are the owner of the design product and responsible for the design's performance. The DQAM has checked to ensure that the design does not conflict with the Everett HOV Design-Build Project design and that the Utility Owner has approved the design package.

[illegible]

I hereby certify that the above listed items have been reviewed, there are no conflicts with the Everett HOV Design-Build Project, and they have been approved by the Utility Owner.

Design Quality Assurance Manager (DQAM)

Form CDDO

MATERIALS RECEIVING REPORT - Form MRR

INSPECTOR'S NAME:

DATE:

SPECIFICATION SECTION:

ACTIVITY CODE:

DESCRIPTION OF MATERIAL RECEIVED:

STORAGE LOCATION:

SUPPLIER:

PO#

INSPECTION CHECKLIST:

QUANTITY DELIVERED:

(quantity and units)

DIMENSION VERIFIED (Y/N):

PROPERLY STORED AND PROTECTED (Y/N):

DELIVERY RECORD/BILL OF LADING NUMBER (circle one):

DESCRIBE IDENTIFICATION MARKS:

(labelled, tagged, painted, etc.)

DESCRIBE ANY DAMAGE:

BEFORE ACCEPTANCE, THE FOLLOWING MUST BE IN INSPECTOR'S HAND!

CERTIFICATE OF COMPLIANCE :

REQUIRED TEST REPORTS INCLUDED:

STATUS:
(mark one)

ACCEPTED AT DELIVERY:

REJECTED AT DELIVERY:

NONCONFORMANCES NOTED:

ACTION TAKEN:

INSPECTOR SIGNATURE:

Form MRR

NONCONFORMANCE REPORT - Form NCR

NCR No. _____

TO: _____ FROM: _____ DATE: _____

LOCATION OF
MATERIAL /
ITEM: _____

DESCRIPTION OF DISCREPANCY

DATE REPLY
DUE

CQAM SIGNATURE: _____

WSDOT SIGNATURE: _____

THE CORRECTIVE ACTION (TAKEN) (TO BE TAKEN) ON _____
IS:_____

_____SIGNATURE OF
RESPONDENT: _____

DATE: _____

COMMENTS: _____

Date Corrective
Action
Completed
Approved As
Corrected_____

CQAM

SIGNATURE: _____

WSDOT

SIGNATURE: _____

Pile Driving Record

INSPECTOR NAME:						DATE:		REPORT #	
ACTIVITY DESC: (INCL. STRUCTURE)								SHT OF	
ACT. NO.:		WIND:		SKY:		TEMP:		PRECIP:	
DESIGN ENGINEER:		HAMMER MODEL & TYPE:						TYPE: DIA:	
GEOTECH ENGINEER:		PILE CONTRACTOR:				FINAL MEASURED LENGTH:		TIP ELEV:	
Depth (ft)	Blows	Remarks	Depth (ft)	Blows	Remarks	Depth (ft)	Blows	Remarks	
1			51			101			
2			52			102			
3			53			103			
4			54			104			
5			55			105			
6			56			106			
7			57			107			
8			58			108			
9			59			109			
10			60			110			
11			61			111			
12			62			112			
13			63			113			
14			64			114			
15			65			115			
16			66			116			
17			67			117			
18			68			118			
19			69			119			
20			70			120			
21			71			121			
22			72			122			
23			73			123			
24			74			124			
25			75			125			
26			76			126			
27			77			127			
28			78			128			
29			79			129			

30			80			130		
31			81			131		
32			82			132		
33			83			133		
34			84			134		
35			85			135		
36			86			136		
37			87			137		
38			88			138		
39			89			139		
40			90			140		
41			91			141		
42			92			142		
43			93			143		
44			94			144		
45			95			145		
46			96			146		
47			97			147		
48			98			148		
49			99			149		
50			100			150		

SKETCH FOUNDATION WITH ORIENTATION AND PILE LOCATION:

Form PDR

FIELD VERIFICATION REPORT - Form FVR

RECORD NO.:	DATE(S) RECEIVED:		
ITEM CHECKED:			
LOCATION:			
OFFICE WORK PREPARED BY:			
_____		_____	
Sign & Print Name		Date	
FIELD WORK COMPLETED BY:			
_____		_____	
Sign & Print Name		Date	
Field Book Audit Performed:			
<input type="checkbox"/> No <input type="checkbox"/> Yes _____ <div style="text-align: center; font-size: small;">(Name of Field Book/Specific Activity Audited)</div>			
DESCRIPTION / FINDING(S):			
COMMENTS:			
CONFORMANCE:	YES	NO	N/A
1. WITH DESIGN INTENT			
2. WITH SPECIFICATIONS			
ACTION TAKEN BY SURVEYOR:			
RESOLUTION OF ABOVE FINDING:			
The CQA signature below certifies the requirements of Section 8.2 (Construction Staking QA) of the QMP have been fulfilled. <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;">_____</div> <div style="width: 35%;">_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 60%; text-align: center;">Responsible Surveyor (Sign & Print Name)</div> <div style="width: 35%; text-align: center;">Date</div> </div>			
Supplemental Documentation Attached: <input type="checkbox"/> Yes <input type="checkbox"/> No			

DISTRIBUTION: Construction Surveyor

Document Control

CQAM

FIELD DESIGN CHANGE

Field Design Change No.:		Design Pkg. #:		Activity code:	
Requested By:		Date Requested:		Date Required:	
Subject Document Type:	<input type="checkbox"/> Plans	<input type="checkbox"/> Specifications	<input type="checkbox"/> Standard Plans	<input type="checkbox"/> Other	
Affected Sheets:					

SUBJECT: _____

DESCRIPTION OF ISSUE AND PROPOSED RESOLUTION:

OR	<input type="checkbox"/> DESIGN INPUT NOT REQUIRED (Changes to be shown on as-builts)	<input type="checkbox"/> DESIGN INPUT REQUIRED
Proposed Resolution Approved: <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>CQAM (Sign & Print Name)</div> <div>Date</div> </div> <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>WSDOT Engineer (Sign & Print Name)</div> <div>Date</div> </div> Change Order <input type="checkbox"/> Yes <input type="checkbox"/> No		<div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>CQAM (Initials)</div> <div>Date Logged</div> </div> <div style="text-align: center;">DESIGN APPROVAL</div> <div style="text-align: center;">(QC documentation & other supportive material on file with designer, as applicable)</div> <div style="display: flex;"> <div style="flex: 1;"> Response <input type="checkbox"/> Written Above <input type="checkbox"/> Attached _____ </div> <div style="flex: 1;"> Contract Document <input type="checkbox"/> Release to follow <input type="checkbox"/> None to be released, show on as-builts </div> </div> <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Responsible Engineer (Sign & Print Name)</div> <div>Date</div> </div> <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>QC Engineer (Sign & Print Name) Signature certifies Concurrence</div> <div>Date</div> </div> <div style="text-align: center;">WSDOT APPROVAL</div> <div style="display: flex;"> <div style="flex: 1;"> Design Audit <input type="checkbox"/> Required _____ <div style="display: flex; justify-content: space-between;"> <div>DQAM (Sign & Print Name)</div> <div>Date</div> </div> <input type="checkbox"/> Not Required </div> <div style="flex: 1;"> Change Order <input type="checkbox"/> Yes <input type="checkbox"/> No </div> </div> <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>WSDOT Engineer (Sign & Print Name)</div> <div>Date</div> </div> <div style="text-align: center;">APPROVAL FOR RELEASE</div> <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Representative (Sign & Print Name)</div> <div>Date</div> </div> <div> *RETURN FDC to Design Engineer; Design Engineer must seal FDC and any attachments prior to release and implementation of response. </div>
<div style="border: 1px solid black; padding: 5px;"> *Responsible Design Engineer Seal w/Signature & Date (Seal Only After GRW Approval for Release) </div> <div style="height: 150px; border: 1px solid black; margin-top: 10px;"></div>		

DISTRIBUTION: Construction Manager:
WSDOT Engineer
CQAM

DQA STRUCTURE DESIGN CERTIFICATION FOR DESIGN PLANS		FORM S-1
Project Number: _____ Project Name: _____ Structure Type: _____ Structure Number: _____ Structure Description: _____ Submittal Type: <input type="checkbox"/> S&L <input type="checkbox"/> ___%PS&E <input type="checkbox"/> Final <input type="checkbox"/> Design / Field Change <input type="checkbox"/> As-Builts Certification For: <input type="checkbox"/> Complete Design <input type="checkbox"/> Partial Design. Specify: _____ Specify Quality Plan: <input type="checkbox"/> WSDOT Structures QP <input type="checkbox"/> Approved Alternate: _____		
DESIGN CERTIFICATION (Designer of Record) By stamping and signing this section, I certify that the design plans specified above comply with the requirements of the Project Structural Design & Detailing Criteria. Print Name: _____ Date: _____ Design Firm: _____	PE Stamp (signed & dated)	
Design DQA Certification By stamping and signing this section, I certify that the design documents specified have been checked in accordance with the requirements of the Project Quality Plan. Print Name: _____ Date: _____ Design Firm: _____	PE Stamp (signed & dated)	
Design QA Certification By stamping and signing this section, I certify that I have verified that the QC for the design documents specified above has been completed in accordance with the requirements of the Project Quality Plan. Print Name: _____ Date: _____ Design Firm: _____	PE Stamp (signed & dated)	
CADD Standards Certification By signing this section, I certify that the structure plans specified above comply with the WSDOT Structures CADD Standards. Signature: _____ Design Firm: _____ Date: _____		
<i>Note: Design Certification is required for all structure types, including Bridge, Box Culvert, Multi-Plate Arch, Retaining Walls, Overhead Signs, and Traffic, Signal, and Camera poles. Maintain all QC/QA records for a minimum of 3 years after project completion.</i>		

DQA STRUCTURE DESIGN CERTIFICATION		FORM S-2
FOR DESIGN CALCULATIONS		
Project Number: _____ Project Name: _____ Structure Type: _____ Structure Number: _____ Structure Description: _____ Type: <input type="checkbox"/> Design Calculations <input type="checkbox"/> Design / Field Change <input type="checkbox"/> Computer Software Verification Certification For: <input type="checkbox"/> Complete Design <input type="checkbox"/> Partial Design. Specify: _____ Specify Quality Plan: <input type="checkbox"/> WSDOT Structures Q <input type="checkbox"/> Approved Alternate: _____		
DESIGN CERTIFICATION (Designer of Record) By stamping and signing this section, I certify that the design documents specified comply with the requirements of the Project Design Criteria, including applicable AASHTO design specifications. Print Name: _____ Date: _____ Design Firm: _____	PE Stamp (signed & dated)	
Design QC Certification By stamping and signing this section, I certify that the design calculations have been checked in accordance with the requirements of the Project Quality Plan. Print Name: _____ Date: _____ Design Firm: _____	PE Stamp (signed & dated)	
Design QA Certification By stamping and signing this section, I certify that I have verified that the QC for the design calculations specified above has been completed in accordance with the requirements of the Project Quality Plan. Print Name: _____ Date: _____ Design Firm: _____	PE Stamp (signed & dated)	
<i>Note: Design Certification is required for all structure types, including Bridge, Box Culvert, Multi-Plate Arch, Retaining Walls, Overhead Signs, and Traffic, Signal, and Camera poles. Maintain all QC/QA records for a minimum of 3 years after project completion.</i>		

DQA STRUCTURE DESIGN CERTIFICATION FOR DESIGN COMPUTER SOFTWARE VERIFICATION		FORM S-3
Type: <input type="checkbox"/> Commercial Software <input type="checkbox"/> Spreadsheet <input type="checkbox"/> Other: _____ Software Vendor / Originator: _____ Program Name: _____ Version: _____ Program Description: _____ Certification Method: <input type="checkbox"/> Hand Calculations <input type="checkbox"/> Vendor Verification Documentation <input type="checkbox"/> Calculations Using Previously Verified Software: _____ Specify Quality Plan: <input type="checkbox"/> WSDOT Structures QP <input type="checkbox"/> Approved Alternate: _____		
DESIGN CERTIFICATION (Designer of Record) By stamping and signing this section, I certify that the computer software specified above has been verified in compliance with the Project Quality Plan and meets the requirements of the Project Design Criteria, including applicable AASHTO design specifications. Print Name: _____ Date: _____ Design Firm: _____	PE Stamp (signed & dated)	
Design QC Certification By stamping and signing this section, I certify that the software verification design calculations have been checked in accordance with the requirements of the Project Quality Plan. Print Name: _____ Date: _____ Design Firm: _____	PE Stamp (signed & dated)	
Design QA Certification By stamping and signing this section, I certify that I have verified that the QC for the software verification specified above has been completed in accordance with the requirements of the Project Quality Plan. Print Name: _____ Date: _____ Design Firm: _____	PE Stamp (signed & dated)	
Notes: This submittal is required for all design software not on the WSDOT Structures Division list of approved software before WSDOT Structure will approve any bridge design that uses the software. Submit to WSDOT Structures Division the following: (1) this completed certification form, and (2) the complete software verification documentation including calculations and QC/QA records.		

APPENDIX D3

DOCUMENT CONTROL PLAN

1.0 PURPOSE

This procedure defines and establishes the document control requirements and responsibilities for the Design-Builder on the Everett HOV Design-Build Project.

2.0 SCOPE

This procedure is applicable to all the Design-Builder personnel. Although hardcopy files may be maintained at three separate locations, the Design-Builders' engineer's office, the contractor's on-site Project office, and the QA field office, the Project Document Control system (PDC) as described within this document is maintained at the Design Builders Engineers office. The PDC receives, logs, captures, and files all correspondence, documents, and library reference materials that are generated and/or received as outlined by this plan from project initiation through closeout. The PDC captures all incoming and outgoing documentation using the DOCS Open software program.

3.0 DEFINITIONS

PDC	Project Document Control
DCA	Document Control Administrator
DIN	Document Identification Number, unique number assigned by the PDC software
QAO	Quality Assurance Organization
DQAM	Design Quality Assurance Manager
CQAM	Construction Quality Assurance Manager

4.0 SYSTEM GOALS AND OVERVIEW

The goal of the document control systems defined by this Plan is to provide a thorough, consistent, and user-friendly method of controlling all of the Design-Builder's documentation associated with WSDOT's Everett HOV Design-Build Project.

The PDC system has both a paper (hard copy) component and an electronic component. All paper documents are stored in the project files and/or the project library, using a comprehensive, logical file code structure. All documents are also logged, scanned, tracked, and accessed using DOCS Open document control software.

Licensed users of the software are able to search for any document on a variety of search criteria, to open and view a scanned image of the document, and to print it out if desired. This electronic approach reduces the frequency with which project staff needs to remove hard copies from the project files, which in turn increases the level of control and security on the documents. However, if the hard-copy/original version of the document is needed for some reason, the user can easily determine from the document control software where it is located in the project files or library.

The following items are also addressed in this Plan:

- Responsibilities
- File code structure

- Specific procedures for getting various document types into the document control system (including email)
- Information on how the electronic document control software is used on this project
- Project library
- Location of, access to, and maintenance of the project files and library
- Electronic file organization and management

5.0 RESPONSIBILITIES

5.1 Document Control Administrator (DCA)

The DCA is responsible for:

- Complete processing of project documents as indicated by project staff, including electronic logging, scanning, and storage of all incoming and outgoing documents and attachments in the document control database.
- Filing and storage of all physical documents such as paper documents, manuals, books, CDs, etc., in the project files and library.
- Establishment and maintenance of a sign-out system for the project files and library.
- Establishment and maintenance of a listing and directory of all materials stored in the project library.
- Monitoring the PDC system for compliance with requirements.

5.2 Design-Builder Personnel

All Design-Builder personnel are responsible for:

- * Submitting to the DCA all relevant incoming and outgoing Project documents (See Section 6.3) for processing and entry into PDC, including all attachments and email.
- * Knowledge and consistent use of file codes on all relevant project documents.
- * Requesting DINs when including them in outgoing correspondence and other documents.
- * Familiarity and compliance with the formats and preparation requirements for documents as defined in this Plan.
- * Following established procedures for access to and removal of hard-copy documents from the project files or library, and for their prompt return.
- * Familiarity and compliance with procedures defined in this Plan for management of electronic files.

6.0 PROCEDURES

6.1 Document Coding

For each document sent to PDC, a Document Control Processing Form (DCPF), included in Attachment 2, must be thoroughly completed (either by hand or electronically) and attached to the document before being sent to the DCA for processing. In accordance with Sections 6.3.1 and 6.3.2 below, the DCPF allows for one or more numeric file codes to be listed for the document. The available codes are identified in the File Code List included in Attachment 1. A current electronic version of the File Code List is also maintained on the PDC server.

In addition, each document is assigned a single document type. The available document types are identified in the Document Type List included in Attachment 1A. A current electronic version of the Document Type List is also maintained on the PDC server.

6.2 Cross-filing

Cross-filing (that is, the listing of more than one file code on the document) is strongly encouraged, to enable the document to be found from a variety of applicable search criteria.

For thick documents (more than 10 pages or so), paper and file space can be conserved by filing the entire document under only the first file code listed. Then, only the first page or the first page plus table of contents (if applicable) are filed under the remaining file codes.

Similarly, for documents with thick attachments (again, more than 10 pages or so), the attachments may be included with the copy going to only the first file code listed. Copies of just the document itself, without the attachments, are filed under all other file codes.

6.3 Getting Documents To and Into Document Control

6.3.1 Incoming Documents

All incoming project-related documents are received and processed as follows:

- For **incoming emails** (that is, emails generated by someone other than the Design-Builder staff), the recipient prints out the email and follows the steps listed below. If there is more than one recipient within the Design-Builder, the first recipient alphabetically (last name) is responsible for printing and processing the email. For incoming **paper documents** received by any means (US Mail, overnight mail, hand delivery, fax, meeting handout, or any other method of transmittal), the addressee proceeds with the steps listed below.
- The addressee fills out a Document Control Processing Form (DCPF; see Attachment 2) by indicating the appropriate file code(s), appropriate activity numbers, and any other information as appropriate. The addressee then forwards the document and DCPF to the DCA for processing.
- The DCA date stamps the document (if not already stamped) and logs the document into the document control database to obtain a Document Identification Number (DIN). The DCA labels the document with the DIN, scans the document (including any attachments and the DCPF), and completes the document entry by adding the file code(s) and other identifying information. The DCA files the original document in the project files or library, with the DCPF attached to the back. The entire original document, including any attachments, is filed under the first file code listed on DCPF. Copies of the document are filed under any additional file codes listed on the DCPF. (Also see Section 6.2, above.)

6.3.2 Outgoing Documents

Outgoing project documents originated by the Design-Builder staff and routed to the Department are also sent to PDC and entered into the document control database as follows:

- The author attaches a DCPF to a copy of the document and fills it out by indicating the appropriate file code(s) and other information as appropriate. The author then forwards the document and attached DCPF to the DCA for processing.

- The DCA date stamps the document and logs it into the document control database to obtain a Document Identification Number (DIN). The DCA labels the document with the DIN, scans the document (including any attachments and the DCPF), and completes the document entry by adding the file code(s) and other identifying information. The DCA files the document in the project files or library, with the DCPF attached to the back. The entire document, including any attachments, is filed under the first file code listed on the DCPF. Copies of the document are filed under any additional file codes listed on the DCPF.

6.4 DOCUMENT CONTROL SOFTWARE

6.4.1 General Information

All project documents are logged using an electronic database to allow for control, tracking, and paperless retrieval (unless hard copies or originals are required for some reason) is being used for the project document control.

The database is located on an exclusive document control server. All entries into the database are made by the DCA. Search capabilities, read-only access to database information, and scanned documents are available to licensed users.

The following information (as applicable) is entered into the document control database for each document, and document searches can be performed on any of these fields:

File Codes(s) (maximum of three)

To Company

To Name

From Company

From Name

Activity Codes (maximum of eight)

Subject (or title of document)

Date on the document

Document Type

Additional Subject Information or Keywords (Description)

Author of DCPF

6.4.2 Document Scanning

As part of the document capture process, documents will be scanned using DOCS Imaging, and the resulting .tif files are linked to the database to allow project staff to view documents electronically. This significantly reduces the need for staff to access the paper files, which increases efficiency and protects the integrity of the project files.

Very thick documents (more than 50 pages or so) that are not expected to be accessed very frequently may only have the cover sheet and table of contents (if applicable) scanned rather than the document in its entirety. The latest version of these documents will be scanned in their entirety prior to the end of the project.

6.4.3 Access Rights

The DCA has read/write/delete access to every document. Other members of the Design-Builder and the Department have only read access to the documents.

6.5 Document Control Library

Certain documents are more suitably stored in a library arrangement rather than in the project files. These documents are generally thick or oversized documents that are used and referenced on an on-going basis by the project staff. These documents are logged in the document control database, similar to other project documents, but with a notation that they are stored in the library. Each document receives a file code (Attachment 1), and the documents in the library are organized alpha-numerically by file code. The DCA keeps a log of all library contents in the document control database.

6.6 Document Control – General Information

6.6.1 Physical Location

The project files and project library are kept at the QA field office.

6.6.2 Access Restrictions

The project files (physical files) are kept in the QA's field office, and access by project staff must be cleared through the DCA. Access to the project library is unrestricted. However, the sign-out sheet (Attachment 3) must be filled out whenever documents are removed from the immediate area and when they are returned.

6.6.3 Maintenance Responsibilities

The DCA has primary responsibility for filing and for maintenance and upkeep of the project files and library. The DCA performs monthly audits of the library contents to verify that all documents are accounted for and are shelved correctly. The DCA also performs monthly audits of the project files to verify that no folders are missing or misfiled. These audits are documented on the Document Control Audit Form (Attachment 4), which are printed out; signed by the DCA, DQAM, and CQAM; attached to the monthly invoice; and filed in document control.

6.7 Controlled Documents

Certain documents are used or referenced by various members of the project team on an on-going basis, and it is imperative that copies being used are up-to-date at all times. The DCA is responsible for the distribution of copies and the tracking of approvals and revisions of all “controlled documents” that are prepared by the Design-Builder.

Once a controlled document has been approved and the distribution list prepared, the DCA sequentially numbers each copy to be distributed, then prepares a log that lists each recipient and the number on the document that they are being assigned. The log indicates the date of transmittal of the original document, plus the date of transmittal of each subsequent revision as applicable.

A list of Project controlled documents is included as Attachment 5. The Controlled Document Log format is included as Attachment 6.

Documents prepared by other entities on the project team (e.g. WSDOT) are controlled in accordance with the requirements of that entity's document control plan.

6.8 Verbal Correspondence

Significant face-to-face and telephone conversations by and between Design-Builder members and any other parties are documented in writing by a memorandum addressed to the file and copied to PDC as detailed in Section 6.3.2.

6.9 Document Retention

All project documents will be stored and maintained as defined in this Plan through the completion of construction and Final Owner Acceptance (FOA). Throughout the term of the contract, project documents will be retained and archived in accordance with these procedures. After completion of the contract, the PDC project documents are delivered to WSDOT.

6.10 Management of Electronic Files

6.10.1 Scanned Documents

Per Section 6.4.2, above, documents are scanned when they are entered into the document control database. The resulting files are saved in a folder on the PDC server. These are the final, official record electronic files for project documents. The DCA has full access rights to this folder; all other project staff have read-only rights.

6.10.2 System Backups

The **PDC server**, where all project files are located (including the document control database, document files in their native format, and scanned image files that are linked to the database), is backed-up in accordance with the following rules:

1. A full backup of all electronic data is performed once a week.
2. An incremental backup of all electronic data is performed daily.
3. The weekly backups are on a three-week rotation to a secured off-site location to guarantee data integrity in the case of a catastrophic environmental problem.

ATTACHMENTS

- 1 File Code List
- 2 Document Control Processing Form
FORM DCPF
- 3 Library/Document Control Sign-out Form
FORM DCSOF
- 4 Document Control Audit Form
FORM DCA
- 5 List of Controlled Documents
- 6 Controlled Document Log
FORM CDL

ATTACHMENT 1

FILE CODE LIST

The following pages include the list of File Codes that are assigned (up to three per document) to allow for organized filing of hard copies and to facilitate document searches in the document control database. A current electronic version of the File Code List is also maintained on the server. (Also see discussion in Section 6.1 of the body of this Document Control Plan.)

A “Miscellaneous” file code is included in virtually every category and sub-category, for those inevitable items that don’t fit anywhere else.

See Separate File for Current File Code Listing

ATTACHMENT 1A

DOCUMENT TYPE LIST

The following is the list of Document Types that may be assigned to a document to facilitate document searches in the document control database. A current electronic version of the Document Type List is also maintained on the server. (Also see discussion in Section 6.1 of the body of this Document Control Plan.)

Only one document type may be assigned to a document package. Therefore, choose the document type that best suits the majority of the documents within a package.

- Calculations
- Contract / Agreement
- Correspondence (memo, letter, e-mail, fax, etc.)
- Drawings / Plans
- FDC-Field Design Change
- Invoice / Progress Payment
- Meeting Minutes
- NCR-Nonconforming Report
- NDC-Notice of Design Change
- Permit
- Report
- RFI-Request For Information
- Schedule
- Specifications
- Other

ATTACHMENT 2

DOCUMENT CONTROL PROCESSING FORM (DCPF)

The DCPF is included at the end of this attachment. This is the vehicle for providing document information to the DCA such that the data entered into the database is meaningful and will render the document searchable.

DCPF guidelines:

- Up to three different “File Codes(s)”, from the list provided in **Attachment 1**, may be given to a document. The most meaningful file code should be noted first.
- Accuracy is extremely important when listing File Codes. If a code is missing a zero, the document will not be a match in a database search.
- Hard copies will be filed under each File Code listed. For thick documents (more than 10 pages or so), only the first page of the document will be filed under File Codes 2 and 3, unless requested by circling “Y” next to “w/ attachments?”
- “To Company” is generally the original addressee’s company.
- “To Name” is generally the original addressee.
- “From Company” is generally the company of the original author of the document.
- “From Name” is generally the original author of the document.
- Up to eight different “Activity Codes”, from the Schedule, may be given to any document.
- “Subject” is generally the title, name, or subject line of the document.
- “Document Date” is the date of the original document.
- “Document Type” is chosen from the list provided in **Attachment 1A**. Only one document type may be used per DCPF package. Therefore, choose a document type that best suits the majority of the documents within the package.
- Under “Additional Subject Information or Keywords” give a brief description of the document contents and/or a list of all words or phrases that could logically be used for a search for the document. The DCA will enter this information in the “Description” field.
- “Author” is the name of the responsible for filling out the DCPF and sending the document(s) to document control. This name should be printed legibly or typed so that they can be contacted if the DCA has any questions regarding the document.

DOCUMENT CONTROL PROCESSING FORM**DOCUMENT CONTROL PROCESSING INFORMATION**

FILE CODE(S):

(1) _____

(2) _____

(w/attachments? Y N)

(3) _____

(w/attachments? Y N)

TO COMPANY:

TO NAME:

FROM COMPANY

FROM NAME:

ACTIVITY CODES:

SUBJECT:

DOCUMENT DATE:

DOCUMENT TYPE:

ADDITIONAL SUBJECT INFORMATION OR KEYWORDS

AUTHOR:

**FORWARD DOCUMENT AND THIS FORM TO THE DCA AS SOON AS POSSIBLE TO AVOID
DELAY IN PROCESSING**

Init. _____

ATTACHMENT 3

LIBRARY/DOCUMENT CONTROL SIGN-OUT FORM

The form on the following page is completed whenever documents or files are removed/borrowed from the document control library or files. The borrower is responsible for the files until they are returned to document control.

LIBRARY/DOCUMENT CONTROL SIGN-OUT FORM

WHEN A DOCUMENT IS NEEDED FROM THE LIBRARY OR DOCUMENT CONTROL FILES, PLEASE FILL OUT THIS FORM AND GIVE IT TO THE DCA. YOU WILL SIGN IT WHEN YOU RECEIVE THE DOCUMENT AND AGAIN WHEN YOU RETURN IT. WHILE A DOCUMENT IS OUT, THIS FORM WILL BE HELD BY THE DCA AND LOGGED INTO AN ELECTRONIC FILE FOR TRACKING. IF THE DOCUMENT HAS NOT BEEN RETURNED BY THE EXPECTED DUE DATE, THE DCA WILL CONTACT BORROWER AS A REMINDER.

DOCUMENT DIN: _____

FILE CODE #: _____

NEEDED BY DATE: _____

EXPECTED RETURN DATE: _____

NAME OF INDIVIDUAL REQUESTING DOCUMENT: _____

SIGN-OUT

SIGN-RETURN

ATTACHMENT 4

DOCUMENT CONTROL AUDIT FORM

The form on the following page is completed each month to verify that all documents are accounted for and shelved and filed correctly.

DOCUMENT CONTROL AUDIT FORM

MONTH:			
AUDIT DATE	INSPECTION	FINDING (YES or NO)	IF NO, INDICATE ACTION TAKEN
	All library documents are present or are properly signed out.		
	All library documents are shelved correctly.		
	All document control files are present or are properly signed out.		
	All document control files are filed correctly.		

DCA: _____
Signature/Print

DPOCM: _____
Signature/Print

CPOCM: _____
Signature/Print

ATTACHMENT 5

LIST OF CONTROLLED DOCUMENTS

- Quality Management Plan

ATTACHMENT 6
CONTROLLED DOCUMENT LOG**DOCUMENT NAME:**

DISTRIBUTION	COPY No.	DATE COPY DISTRIBUTED					
		Rev. 0	Rev. 1	Rev. 2	Rev. 3	Rev. 4	Rev. 5